

SIERRA LEONE.

Annual Report

ON THE

MEDICAL DEPARTMENT

FOR THE

YEAR ENDED 31ST DECEMBER, 1913.



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SIERRA LEONE.

ANNUAL MEDICAL REPORT FOR THE YEAR ENDING 31ST DECEMBER, 1913.

PRINCIPAL MEDICAL OFFICE,
FREETOWN, SIERRA LEONE,
June, 1914.

SIR,

I have the honour to submit, for the information of His Excellency the Governor, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the health and sanitary condition of the Colony and Protectorate of Sierra Leone for the year 1913, together with the returns, etc., appended thereto.

I have the honour to be, Sir,

Your obedient servant,

THOS. E. RICE,

Principal Medical Officer.

The Honourable
The Colonial Secretary,
Freetown.

I.—ADMINISTRATIVE.

STAFF.

The Medical Staff consisted of :—

- 1 Principal Medical Officer,
- 1 Senior Sanitary Officer,
- 1 Senior Medical Officer,
- 1 Sanitary Officer,
- 20 Medical Officers,
- 3 Native Medical Officers.

The following changes have taken place in the Staff :—

Dr. R. M. Forde, Principal Medical Officer, retired on pension in the month of July.

Dr. T. E. Rice was appointed Principal Medical Officer from the 22nd of August.

Dr. D. Alexander, Sanitary Officer, was promoted to be Senior Sanitary Officer of the Gold Coast Colony.

Dr. J. A. Beringer came from the Gold Coast to act as Sanitary Officer.

The following Medical Officers were appointed :—Dr. Hans Fleming, Dr. W. Allan, Dr. E. H. Mayhew, Dr. F. E. Whitehead, Dr. W. A. Young.

Invalidings.—Dr. Hans Fleming (permanently), Dr. J. McConaghy (temporarily), Dr. A. Bremner (permanently).

Seconding.—Dr. G. G. Butler was seconded for special work in connection with the Yellow Fever Commission, and collaborated with Major Statham, R.A.M.C., and afterwards with Dr. J. M. Dalziel and Dr. W. B. Johnson, who were seconded for the same purpose from Northern Nigeria.

Dr. J. Wallace Collett acted as Principal Medical Officer from the 2nd of March, when Dr. Forde proceeded on leave until my arrival in the Colony on the 27th of August.

The Government Dentist, Mr. H. F. Hardie, arrived in the Colony on the 18th of September and remained until the 11th of October.

European Nurses.—The Staff was maintained at five, three of whom were attached to the Nursing Home and two to the Colonial Hospital.

Changes in the Native Staff.—During the year the Department lost the services of Mr. G. M. Spilsbury, Second Grade Clerk, who retired on the ground of ill-health after 32 years' service.

I also regret to have to record the death of Mr. J. P. Metzger, First Class Dispenser.

FINANCIAL.

REVENUE.

	£	s.	d.
Hospital Receipts	142	5	3
Nursing Home Receipts	223	15	9
Sale of Medicines, etc.	254	12	5
Receipts for the maintenance of lunatics from Southern Nigeria and the Gambia... ..	672	7	0
Salary of Medical Officer to the Railway Construction ...	430	10	4
Total	£1,723	10	9

EXPENDITURE.

	Estimate.			Actual Expenditure.		
	£	s.	d.	£	s.	d.
Medical	*31,327	0	0	30,047	10	9
Sanitary	10,570	0	0	8,950	13	10

* Including Supplemental (£3,272).

II.—PUBLIC HEALTH.

GENERAL REMARKS.

Since during the period under review the registration of deaths was compulsory in only one town, Freetown, in the whole of the Colony and Protectorate our knowledge of the state of the Public Health is largely based upon returns received from the various Hospitals and Dispensaries.

Malaria.—Out of a total attendance of 28,811 out-patients 2,508 are returned as cases of Malaria, whilst among 2,725 in-patients 216 cases are ascribed to this disease. There is no evidence to indicate whether the diagnosis was determined clinically or microscopically, but there is reason for assuming that in the majority of cases it was based upon the clinical symptoms.

It is hoped that in future reports more definite information will be available on this point, as Medical Officers now state in the remarks column of their monthly returns whether the disease has been diagnosed clinically or by the microscope.

In Freetown itself, including the Cline Town Dispensary, the Gaol and the Colonial Hospital, 997 cases of Malaria were treated as out-patients, whilst 106 were admitted to the Colonial Hospital.

There appears to be reason for believing that in Freetown the Malarial incidence is high, and this is borne out by the results obtained by Dr. Butler from an examination of 100 school children, 49 per cent. of whom were found to be infected.

Dr. Butler's instructive report will be found under the heading "Scientific" in Part IV. of this report.

In Freetown, since the beginning of the last quarter of the year, all cases of Malarial Fever diagnosed microscopically have been notified to the Medical Officer of Health, and it is hoped that the information thus accumulated will in time enable the more important foci to be located and dealt with.

Freetown has been for some years in possession of a pipe-borne water supply, and as will be seen from the Sanitary Report it has been found possible to reduce the stegomyia index to a commendably low figure. Both the statistics given above and the condition of the earth trenches that only partially serve to drain away the surface water call loudly for a system of surface drainage, and demand that the period of delay necessitated by the preparation of a comprehensive scheme should be as brief as possible.

Blackwater Fever.—Nine cases of this disease were reported, of which two were fatal.

Trypanosomiasis.—Eight cases of Sleeping Sickness came under observation in Freetown during the last six months of the year, particulars of which will be found in the following table:—

Date of Admission.	Name.	Residence.	Native of	Probably infected at
18- 7-13	Laminah	Freetown	Petifu in Magbele	Magbele.
8- 9-13	Allie	"	Sierra Leone	Fernando Po.
22-10-13	K.B.	"	Liberia	Freetown.
7-11-13	Blackie	"	Mendi	Fernando Po.
14-11-13	James	"	"	Freetown.
17-11-13	Bai	"	Kwaia	Malenki.
28-11-13	C.N.	Allen Town	Sierra Leone	Allen Town.
17-12-13	Karey	Freetown	"	Congo.

In addition to the above, several suspicious cases were described by the Medical Officer of the Koinadugu District. Detailed reports of all these cases have already been submitted.

During the month of August Sleeping Sickness was added, by an Order in Council, to the list of infectious diseases to which section 32 of the Public Health Ordinance may be applied, which gives power of arrest and compulsory detention in a Contagious Diseases Hospital.

Sleeping Sickness was described in Sierra Leone by Winterbotham in 1803, and since that period attention has been drawn to its existence from time to time, notably by Grattan in 1906.

It has yet to be determined, therefore, whether this disease is more prevalent at the present time than it has been for the past 100 years, as it is possible that the increased attention recently directed to it may be merely the result of improved and more accurate methods of diagnosis.

Dysentery.—At the various Hospitals and Dispensaries 422 cases of this disease came under treatment during the year, but nothing in the nature of an epidemic was recorded.

Leprosy.—Twenty-six cases of Leprosy were diagnosed amongst the out-patients, whilst the returns from the Leprosy Ward of the Male Incurable Hospital at Kissy show that four cases were under treatment at the beginning of the year, eleven were subsequently admitted, two cases terminated fatally and two remained at the end of the year, eleven absconding.

Within the Colony the segregation of Lepers is compulsory; but as will be judged from the above figures such compulsory segregation is purely nominal, as the majority of them escape after a few days, whilst in the Protectorate segregation is not enforced either by the Government or the Native Administration.

The whole subject is at present under consideration.

Tuberculosis.—Throughout the Colony and Protectorate 112 cases of this disease were returned, and 12 deaths from this cause were reported. In the Freetown Hospital 34 cases were treated, 10 of which terminated fatally.

It would, however, be a hasty deduction to assume from these facts that the disease is more widely prevalent or of greater virulence in Freetown than in other parts of the Colony and Protectorate, since the natives of Freetown have been accustomed for many years to seek medical treatment, and consequently our information as to the incidence of disease among them is more complete than it is in other centres of the population.

If any reliance is to be placed upon the Registrar's returns for Freetown embodied in Table E, in which, out of a total of 778 deaths for the year 1913, 45 are returned as due to Tuberculosis in a population of 34,090, the percentage works out at about 1·32 per thousand living at all ages.

These figures contrast not unfavourably with the death-rate from Tuberculosis in the United Kingdom, but such comparison is of little value in conditions so divergent, and their importance can only be gauged relatively to the incidence of the disease in other parts of the Tropics where the conditions approximate to those obtaining in Freetown.

Beriberi.—The outbreak of this disease, which commenced in the Freetown Gaol in the previous year, unfortunately continued, 17 additional cases and 5 deaths occurring, and it was made the subject of a special report.

Syphilis.—339 cases of this disease were treated in the Out-patient Departments of the various Hospitals and Dispensaries.

Dr. Orpen, in his annual report on Batkanu, gives a chart showing the percentage of syphilitic cases to the total number of cases attending the Dispensary each month over a number of years, and incidentally comments, as other observers have done, on the apparently comparative rarity of the congenital form of this disease.

Ankylostomiasis.—The prevalence of this disease, it is obvious, is not to be judged by the out-patient returns, in which a total of three cases treated is recorded.

Dr. Young, in the course of a careful investigation of the incidence of the parasite among the prisoners in the Freetown Gaol, found no less than 41 per cent. to be infected.

Smallpox.—Both the Colony and Protectorate were singularly free from this disease.

ANNUAL VACCINATION RETURNS.

Year.	Total Vaccinated.	Successful.	Unsuccessful.	Not seen.
1911	8,432	5,129	1,525	1,708
1912	10,778	8,516	751	1,511
1913	9,371	6,311	1,191	1,869

EUROPEAN OFFICIALS.

TABLE SHOWING THE SICK, INVALIDING AND DEATH-RATES OF EUROPEAN OFFICIALS.

	1911.	1912.	1913.
Total number of Officials resident	192	230	244
Average number resident	120	225	131
Total number on sick list... ..	90	98	97
Total number of days on sick list	532	561	948
Average daily number on sick list	1.45	1.53	2.59
Percentage of sick to average number resident... ..	75%	43.55	74.04
Average number of days on sick list for each patient	5.91	5.72	9.77
Average sick time to each resident	4.43	2.43	7.23
Total number invalided	5	4	13
Percentage of invalidings to total residents	2.6	1.73	5.32
Total deaths	1	4	3
Percentage of deaths to total residents ... ..	.52	1.07	1.22
Percentage of deaths to average number resident ... ..	.83	1.73	2.27

HILL STATION.

The total number of residents at Hill Station was 65, made up as follows :—

Government Officials	57
Military	5
Missionaries	2
The African Cable Company	1

The general health was satisfactory, the only cases of climatic diseases that occurred manifesting themselves amongst those officials whose duties occasionally take them into the Protectorate, where hitherto segregation as a method of prophylaxis has not received the attention it deserves, either in the planning of District Headquarters or in the location of Rest Houses, the latter being commonly situated in native towns or villages.

Water Supply.—Owing to inadequate storage capacity, great inconvenience was experienced over a period of two months in the dry season.

GENERAL HEALTH OF EUROPEAN OFFICIALS.

The total number of European official residents was 244. There were three deaths during the year, as follows:—

Dysentery	...	...	...	...	...	1
Accident	...	...	...	...	...	1
Blackwater Fever	...	...	...	...	...	1
(Died in England while on leave.)						

Thirteen were invalid from the following causes:—

Adenitis	...	...	...	...	...	1
Neurasthenia	...	...	...	...	...	2
Dysentery	...	...	...	...	...	1
Alcoholism	...	...	...	...	...	1
Purpura	...	...	...	...	...	1
Mediastinal Tumour	...	...	...	...	...	1
Hepatitis	...	...	...	...	...	2
Neuralgia	...	...	...	...	...	1
Tuberculosis	...	...	...	...	...	1
Duodenal Ulcer	...	...	...	...	...	1
Psoriasis	...	...	...	...	...	1

GENERAL EUROPEAN HEALTH.

The total number of European residents was 1,267, made up as follows:—

Officials	...	...	...	...	...	244
Military	...	...	...	...	...	738
Non-officials	...	...	...	...	...	285
Total						1,267

CLASSIFICATION OF DEATH RETURNS OF EUROPEANS FOR 1913.

Government Officials (*see above*) ... 3

Military, 5:—

Malaria	...	...	...	...	...	2
Blackwater Fever	...	...	...	...	...	1
Peritonitis	...	...	...	...	...	1
Drowning	...	...	...	...	...	1

Non-officials, 2:—

Malaria	...	...	...	...	...	1
Blackwater Fever	...	...	...	...	...	1

Total ... 10

CLASSIFICATION OF INVALIDING RETURNS OF EUROPEANS FOR 1913.

Government Officials, 13 (for details *see* page 8).

Military, 25 :—

Wound of eye...	...	...	...	...	1
Malaria	...	...	...	...	7
Debility	...	...	...	...	1
Neurasthenia	...	...	...	...	3
Syphilis	...	...	...	...	1
Tubercle of lung	...	...	...	...	3
Epilepsy	...	...	...	...	1
Beriberi	...	...	...	...	1
Thyroidism	...	...	...	...	1
Hypermetropia	...	...	...	...	1
Rheumatism	...	...	...	...	1
Blackwater Fever	...	...	...	...	3
Appendicitis	...	...	...	...	1

Non-officials, 21 :—

General Debility and Anæmia	...	...	...	...	1
Anæmia	...	...	...	...	3
Malarial Fever	...	...	...	...	6
Debility	...	...	...	...	3
Chronic Gastritis	...	...	...	...	2
Blackwater Fever	...	...	...	...	4
Dysentery	...	...	...	...	1
Pyorrhœa Alveolaris	...	...	...	...	1

EUROPEAN NURSING HOME, FREETOWN.

There were 70 admissions in this Institution during the year, as follows :—

Government Officials	...	...	...	...	20
Mercantile	...	...	...	...	43
Shipping	...	...	...	...	6
Missionary	...	...	...	...	1

The following is a classification of the diseases treated :—

Malaria	...	...	...	...	20
Debility with fever (unclassified)	...	...	...	...	1
Hyperpyrexia	...	...	...	...	1
Blackwater Fever	...	...	...	...	4
Rheumatism	...	...	...	...	2
Influenza	...	...	...	...	5
Bubo	...	...	...	...	1
Adenitis	...	...	...	...	5
Jaundice (Catarrhal)	...	...	...	...	1
Hæmophilia	...	...	...	...	1
Appendicitis	...	...	...	...	1
Tubercle	...	...	...	...	1
Purpura	...	...	...	...	1
Cystitis	...	...	...	...	1
Epididymitis	...	...	...	...	1
Urethritis	...	...	...	...	1
Hepatitis	...	...	...	...	1
Tropical Abscess of Liver	...	...	...	...	1
Pyonephrosis	...	...	...	...	1
Dysentery	...	...	...	...	1

Duodenal Ulcer	...	...	...	...	1
Gastric Catarrh	...	...	...	...	1
Congestion of Liver	...	...	...	...	1
Diarrhœa	...	...	...	...	1
Debility	...	...	...	...	1
General Debility	...	...	...	...	4
Heat Exhaustion	...	...	...	...	1
Gall Stone	...	...	...	...	1
Morphinism	...	...	...	...	1
Ulcer (penis)	...	...	...	...	1
Ulcer (leg)	...	...	...	...	1
Contusion of back and spine...	...	...	...	...	1
Gun shot wound	...	...	...	...	1
Fracture of jaw	...	...	...	...	1
Mental depression	...	...	...	...	1

It may not be out of place here, before leaving the subject of the General Health of Europeans, to call attention, as has been done in other West African Colonies, to one factor that materially affects the health of Europeans on the Coast, and that is the general dullness of life out here.

It is generally acknowledged that exercise is essential to the health of Europeans in the Tropics.

The development of this Colony in the past has been hampered by lack of funds, but with the increasing prosperity the Government might do more than has been done in the past to provide facilities for games at Hill Station, in Freetown and at the various District Headquarters in the Colony and Protectorate.

NATIVE OFFICIALS.

TABLE SHOWING THE SICK, INVALIDING AND DEATH-RATES OF NATIVE OFFICIALS.

	1911.	1912.	1913.
Total number of Officials resident	721	655	551*
Average number resident	693	421	551
Total number on sick list	749	527	1,028
Total number of days on sick list	3,473	3,326	5,687
Average daily number on sick list	9.51	9.11	15.58
Percentage of sick to average number resident	108%	125.17	186.38
Average number of days on sick list for each patient	4.63	6.31	5.53
Average sick time to each resident	5.01	5.07	10.32
Total number invalided	3	1	7
Percentage of invalidings to total residents	0.41%	0.15	1.25
Total deaths	2	2	6
Percentage of deaths to total residents	0.27%	0.47	1.08
Percentage of deaths to average number resident	0.28%	0.30	1.08

* Policemen and Boatmen not included.

VITAL STATISTICS.

Freetown is the only centre of the population in which statistics of any value are obtainable. Its population, according to the 1911 census, was 34,090.

During the year 1913, 778 deaths and 590 births were registered.

In Tables A, B, C, D and E attached to this Report will be found the following statistics :—

- (a) Infantile mortality.
- (b) Mortality over 12 months.
- (c) Mortality due to different diseases up to 5 years.
- (d) Mortality due to different diseases over 5 years.
- (e) Mortality due to different diseases at all ages.
- (f) Distribution of deaths according to months and sexes.

Too much reliance must not be placed upon them, as the majority of deaths are not certified by medical men.

HOSPITALS AND DISPENSARIES.

Appended to this Report will be found the Annual Reports of the various Hospitals and Dispensaries.

Some of the latter are in charge of Native Dispensers, who have been trained in the Colonial Hospital, Freetown, and their returns have hitherto been included in the annual statement of diseases treated at out-stations; but this year they are shown under a separate heading in order to avoid misunderstanding. One Dispensary, for instance, records the treatment of 87 cases of Oriental Sore during the year—a disease which has hitherto been regarded as exceedingly rare in West Africa and can only be diagnosed with certainty by the aid of a microscope, an instrument not supplied to Dispensers.

There can be no doubt that these Dispensaries do a certain amount of good by treating minor surgical ailments, but then the natives themselves possess simple remedies for such ailments.

How much harm is done by the prescribing of remedies by persons who are only qualified to dispense it is difficult to estimate, but it is not to the credit of European medicine that the practice of it should be carried on by unqualified persons, and I am inclined to think that the interests of the public health would be better served were the centres at which Dispensaries have been established visited once a month by a travelling Medical Officer accompanied by a Dispenser.

THOS. E. RICE,

Principal Medical Officer.

31st May, 1914.

III.—HOSPITALS AND DISPENSARIES.

ANNUAL REPORT OF THE COLONIAL HOSPITAL, FREETOWN.

(By Dr. J. WALLACE COLLETT, S.M.O.)

Charge.—Dr. Wood-Mason was in charge of the Hospital from the beginning of the year until the 9th of July, when he handed over to Dr. Bremner on his being transferred to Bonthe. Dr. Collett, S.M.O., took over charge on the 27th of August.

Staff.—The visiting staff consisted of :—

The Senior Medical Officer,
The Medical Officer, Cline Town (until the 31st October),
The Medical Officer in charge of the Laboratory,
Dr. Renner, Native Medical Officer (until his retirement in May from the Service),
Dr. Arbuckle,
Dr. Easmon, Native Medical Officer.

The Native Staff at the Colonial Hospital consisted of :—

The Resident Dispenser,
The Assistant Resident Dispenser,
Dispenser Luke,
18 Male Nurses and Dressers,
8 Female Nurses,
5 Female Probationers,
The Gatekeeper,
The Storekeeper,
The Assistant Storekeeper,
The Laundryman,
The Cook,
The Assistant Cook,
The Head Labourer, and
8 Hospital Labourers.

The following members of the Hospital Staff resigned their appointments during the year, viz. :—

Dispenser Buck,
Dresser E. C. Turner (on medical grounds),
Female Nurses Davies, Hinton, Campbell, Coker and Pratt,
Female Probationers Annie Johnson and S. Cyprian (on medical grounds) and L. Bull,
Cook Jacob Clarkson.

The following promotions took place during the year :—

To 3rd Class Dispensers—Nurses (1st Class) Doherty, May and Hedd.

To 1st Class Nurses—Nurses Ajax, Wyse, Williams and Gray.

To 2nd Class Nurses—Apprentices C. T. Cole, K. A. King, J. E. Lewis and S. H. Faulkner.

New Appointments :—

As Male Apprentices—R. D. Jones, S. B. Vivour, V. M. Turner,
M. L. Rogers, A. E. Jones-Brown and J. K. James.
As Female Probationers—L. Cole, S. Cyprian, L. Archibald,
E. B. M. Lardner and E. Bull.

ANNUAL RETURN OF THE KING HARMAN MATERNITY WARD, COLONIAL
HOSPITAL, FREETOWN.

Synopsis of Cases.

Presentations (not including Miscarriages) :—

Vertex	...	...	...	...	...	59
Footling	...	...	...	...	...	—
Breech	...	...	...	...	...	3
Transverse	...	...	...	...	...	1

Instrumental.

Forceps Cases	...	...	...	...	...	2
Cæsarean Section	...	...	...	...	...	1

Complications of Mothers after admission.

Ruptured Perineum	...	...	...	...	...	2
Retained Placenta	...	...	...	...	...	2
Post-partum Hæmorrhage	...	...	...	...	...	—
Prolapse of Cord	...	...	...	...	...	1
Eclampsia	...	...	...	...	...	2

In-Patients.—The Hospital complement is 73, the daily average number of beds occupied during the year being 54. The different wards are distributed amongst the visiting staff of Medical Officers. On the 31st of December 48 patients remained in the Hospital. The number of new cases during the year was 1,465; there were 109 deaths, which gives a percentage of 7·204 of the total number of cases treated, which was 1,513. This is a slight increase of ·7 per cent. over the death-rate of last year.

Operations.—There were 365 operations performed during the year, which is an increase of 49 over last year. A comparative statement of the operations performed in this Hospital for the last 12 years is as follows :—

1902	...	...	...	...	...	44 Operations.
1903	...	...	...	...	...	126 „
1904	...	...	...	...	...	145 „
1905	...	...	...	...	...	179 „
1906	...	...	...	...	...	146 „
1907	...	...	...	...	...	190 „
1908	...	...	...	...	...	135 „
1909	...	...	...	...	...	218 „
1910	...	...	...	...	...	220 „
1911	...	...	...	...	...	318 „
1912	...	...	...	...	...	316 „
1913	...	...	...	...	...	365 „

TABLE OF SURGICAL OPERATIONS
(Under Chloroform and other Anæsthetics.)

COLONIAL HOSPITAL, 1913.

	Remain- ing in Hospital, 31-12-12.	Number Admitted.	Total.	Successful.	Not Re- lieved.	Died.	Remain- ing in Hospital, 31-12-13.
Abdominal Section... ..	1	4	5	4	—	1	—
Abscess of Liver, Incision	1	2	3	3	—	—	—
Abscesses, Incision... ..	5	38	43	42	—	—	1
Amputations	—	15	15	15	—	—	—
Appendicitis, Suppurating, Incision	—	1	1	1	—	—	—
Arthrotomy	—	2	2	2	—	—	—
Avulsion of Toe-nail	—	4	4	4	—	—	—
Balanitis, Incision	—	1	1	1	—	—	—
Buboes, Incision	—	8	8	7	—	—	1
Cæsarean Section	—	1	1	—	—	1	—
Cancer of Breast, Removal of Breast	—	2	2	2	—	—	—
Carbuncle, Incision	1	—	1	1	—	—	—
Carcinoma of Liver, Incision	—	1	1	—	—	1	—
Exploratory	—	6	6	5	—	1	—
Cellulitis, Incision for	2	57	59	58	—	—	1
Cirrhosis of Liver, Incision Explor-	—	1	1	—	—	1	—
atory	—	3	3	3	—	—	—
Curetting of Uterus	—	2	2	2	—	—	—
Cystotomy	—	3	3	3	—	—	—
Dislocation, Reduction of	—	18	18	13	—	3	2
Elephantiasis of Scrotum, Removal	—	4	4	4	—	—	—
Enucleation of Eyeball	—	6	6	5	—	1	—
Extravasation of Urine, Relief of...	—	6	6	6	—	—	—
Foreign Body, Removal of... ..	—	13	13	11	—	—	2
Glands, Removal of	—	11	11	11	—	—	—
Gland Puncture	—	2	2	2	—	—	—
Hæmatocele, Incision	3	31	34	29	—	3	2
Hernia, Radical Cure & Herniotomy	—	12	12	11	—	1	—
Hydrocele, Radical Cure	—	1	1	1	—	—	—
Hysterectomy	—	1	1	1	—	—	—
Ligature of Artery	—	3	3	3	—	—	—
Lumbar Puncture	—	1	1	1	—	—	—
Œdema of Prepuce, Incision	—	1	1	1	—	—	—
Paracentesis of Scrotum, for Orchitis	—	2	2	1	—	—	1
Paracentesis of Thorax	1	4	5	5	—	—	—
Periostitis, Scraping	—	1	1	1	—	—	—
Pyo-salpinx, Excision of Tube	—	2	2	1	1	—	—
Resection of Rib	—	2	2	2	—	—	—
Scraping of Fistula in Ano	—	5	5	4	—	—	1
Scraping of Gland	—	6	6	6	—	—	—
Scraping of Tuberculous Arthritis...	—	10	10	10	—	—	—
Scraping of Ulcer	—	3	3	3	—	—	—
Sequestrotomy	—	8	8	8	—	—	—
Setting up of Fracture	—	3	3	3	—	—	—
Skin Grafting	—	1	1	1	—	—	—
Splenectomy	1	32	33	31	—	2	—
Stricture, Dilatation of	—	1	1	1	—	—	—
Synovitis, Incision	1	14	15	15	—	—	—
Tumours, Removal of	—	1	1	1	—	—	—
Ulcer of Penis, Slitting of Prepuce	—	4	4	4	—	—	—
Urethrotomy, External	—	5	5	5	—	—	—
Wounds, Suturing of							
Total	16	365	381	354	1	15	11

The principal diseases amongst the in-patients were:—Dysentery, Malaria, Pneumonia, Tuberculosis, Rheumatism, Bronchitis, Pleurisy, Hernia, Inflammation of Lymphatic Glands, Elephantiasis, Bright's Disease, Stricture of Urethra, Phimosi, Abscesses and Ulcers.

Special Diseases.—A perusal of the Sick Returns of the Colonial Hospital will show several cases of *Trypanosomiasis*, towards which disease attention has been specially directed during this year, and notes of which have been duly forwarded for the information of the proper authorities.

The existence of *Enteric* amongst natives has also been observed, and notes of a case under my care have been forwarded through the Yellow Fever Commission.

The following special diseases were treated in the Hospital during the year:—

Malaria.

Sub-Tertian	...	...	...	...	91
Quartan	...	...	...	...	3
Chronic Malaria	...	...	...	...	13
Blackwater	...	...	...	...	1
					108

Leprosy.

(a) Nodular	...	...	...	...	1
(b) Anæsthetic	...	...	...	...	—
					1
Enteric	...	...	...	...	2
Beriberi	...	...	...	...	2
Dysentery	...	...	...	...	21
Trypanosomiasis (Sleeping Sickness)	...	...	...	...	10

OUT-PATIENTS' DEPARTMENT.

During 1913 there were 12,910 male and 9,535 female attendances as out-patients, which is a total of 22,445, and is a decrease of 4,297 as compared with 1912. This decrease is due to two facts, viz., the continued enforcement of a small charge for medicines, and the opening of a Branch Dispensary at Cline Town, which has deflected from the Central Institution a large number of patients living in that portion of the town.

(Signed) J. WALLACE COLLETT,
Senior Medical Officer.

YEARLY REPORT OF WORK OF COLONIAL HOSPITAL
LABORATORY DURING 1913.

No regular routine work was done during the first six months of the year. During the next three months Dr. Butler did as much as his spare time from Yellow Fever work would allow.

A Laboratory Medical Officer was appointed at the beginning of October, and so every in-patient has been examined as far as possible. During the last quarter there have been two members of the Yellow Fever Commission, Drs. Dalziel and Johnson, working in the Laboratory, besides the Medical Officer.

At the beginning of December the new Laboratory was fit for use, and being equipped with many new appliances and chemicals, more variety of work has been accomplished, and a larger quantity got through.

Results labelled "Y.F.C." indicate work done by the Yellow Fever Commission, and being work connected with the Hospital are therefore included in this Report.

Table "A" shows the results of blood examination of 705 cases of Fever.
(90% Y.F.C.)

“A.”

				1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Sub-Tertian	...	...	...	—	198	64	
Benign Tertian	...	...	...	—	11	1	
Quartan	...	...	...	—	10	22	
Trypanosomes	...	...	...	—	—	2	
No parasites	...	...	...	2	205	200	
Total	...	...	...	2	424	289	715
Percentage Malaria	...	...	...	...	50·4	30·1	

Blood counts were done in all negative cases.

“B.”—*Examination of Blood for Microfilaria.*

	1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Microfilaria Bancrofti	7	37	34	
, Perstans	—	—	1	
Negative	37	364	378	
Total	44	401	413	858
Percentage ... ..	...	9.34	8.4	

“C.”—*Urines.*

	1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Showing faint trace } ,, large quantity } ,, absence of Albumen }	40	{ 129 60 246	173 56 197	
Total	40	435	426	901

Two specimens showed *Bilharzia Hamatobia* present.

„ „ „ Sugar present (*not* diabetic).

One specimen ,, accidental infection of a *Trematode's Ora*.

The average measurements were:—Length, 60μ – 72μ .

Breadth, $37\mu\text{--}40\mu$.

Egg was of *Fasciola* type.

The following information has been abstracted from the last quarter's figures :—

Of those showing a “faint trace” of albumen, 135 had, or admitted having had at some previous date, Gonorrhœa.

Of those showing a large quantity of albumen, 13 had, or quite recently had, Gonorrhœa.

Of those showing absence of albumen, 62 were children up to the age of puberty, and it is presumed they could not have had Gonorrhœa, which would thus raise the percentage to 40·7 per cent., the remaining 135 denying Gonorrhœa at any time.

The Gonorrhœal percentage for all patients = 34·7.

Of those having, or admitting having had, Gonorrhœa, 100 per cent. show presence of albumen. Compared with the results of the prison (*vide* Prison Report), where only 31·9 per cent. have albumen in the urine, this fact appears to indicate that during an illness some part of the urinary tract becomes abnormal and albumen appears in the urine. Whether this lesion be the old urethral sore, or renal, is difficult to say, but very rarely are casts found, where a mere trace of albumen is got. Should this hypothesis be anywhere near the truth, the presence of albumen in suspected Yellow Fever cases loses its value, and renal casts must straightway be looked for.

NOTE.—Only 10 cases showing faint trace of albumen had Gonorrhœa at the time of examination.

“D.”—*Examination of Fæces.*

	1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Ankylostome Ova... ..	—	28	83	
Ascaris „	1	32	61	
Trichocephalus Dispar Ova	—	10	34	
Strongyloides Larva	—	12	17	
Oxyuris	—	—	1	
Tænia Saginata	1	—	1	
Entamœbæ	—	5	2	
Negative	7	76	180	
Total number of cases ...	9	163	379	551
Ankylostome percentage ... ..	...	16·6	25·5	

Many cases had more than one species present.

Four cases of *Fæces* were examined for *Ankylostome Worms* :—

Negative = 2.

Ankylostomum duodenale = 1.

Necator Americanus = 1.

Hence both varieties exist in Freetown.

“E.”—*Examination of Sputum.*

	1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Tubercle Bacillus present ...	3	13	8	
„ „ absent	3	16	41	
Total	6	29	49	84

In no case has any *Bronchial Spirochæte* been found.

“ F.”—*Examination of Pus.*

	1st Quarter.	2nd & 3rd Quarter.	4th Quarter.	Total.
Gonococci present	2	4	1	Y.F.C.
Pyogenic cocci	—	1	2	
Spirochæte of Refringens type ...	—	—	1	
Negative	1	1	2	
Total	3	6	6	15

“ G.”—*Examination of Scrapings.*

Leprosy *Bacillus* present = 2
Negative = 5

Scraping from Tropical Ulcer. Negative = 2 } Y.F.C.
Spirochætes and *Fusiform Bacilli* = 1 }

One scraping from the mouth showed the presence of a *Bipolar Bacillus* and *Diplococcus*.

“ H.”—Lumbar punctures made for diagnosis of *Trypanosomiasis* and Negative = 2.

“ K.”—Pleural effusion examined and Negative = 1.

“ L.”—Gland punctures and examination of material :—
Negative = 5
Positive = 4
—
Total = 9
=

M.”—Wassermann reactions. Total = 3 } Y.F.C.
Positive = 2 }

“ N.”—Three samples of water were quantitatively examined.

“ P.”—26 rats examined and in all cases spleen normal (absence of plague), but liver showed in some cysts of *Tænia Crassicolis* (Y.F.C.).

“ R.”—Analysis of fatty substance = fat and cockroaches.

“ S.”—Post-mortems = 18.

Other work done by the Yellow Fever Commission having no bearing on the Hospital work has purposely been left out.

(Signed) W. A. YOUNG,
Medical Officer, Laboratory.

January 6th, 1914.

REPORT OF THE GOVERNMENT DENTAL SURGEON.

THE HOSPITAL,
FREETOWN,
October 13th, 1913.

Sir,

I have pleasure in submitting to you my first report of the dental work done in the Colony from October 12th, 1912, to December 13th, 1912, and also from September 18th, 1913, to October 11th, 1913, inclusive :—

ORDINARY OPERATIONS.

Europeans.	Nature of work.	Natives.	Nature of work.
39	Fillings 34	96	Fillings 28
	Extractions... .. 11		Extractions 121
	Ether operations, Sealings,		Ether operations, Sealings,
	Dressings, replacing		Dressings, replacing
	Crowns, etc. 23		Crowns, etc. 21

I arrived in Sierra Leone on October 12th, 1912, and the time spent in the Colony on both the outward and homeward visits has been fully occupied. Of the total number of fillings inserted for European Officials 19 were amalgam, 10 were osteoplastin, 3 were permanent gutta-percha, while 2 were porcelain inlays inserted by rod and line method. Sixteen of the teeth filled involved somewhat tedious and exhausting root treatment; there was 1 extraction under nitrous oxide, while in 10 cases a local anæsthetic was used. The general condition of the mouths examined was, on the whole, good, and I am glad to be able to report that in only a few cases were there signs of gross neglect.

2. As regards the Native Officials of the Colony, dental caries is, unfortunately, extremely prevalent amongst them, and their teeth compare unfavourably with their neighbours of the sister Colonies. Indeed, out of 87 adult mouths examined only 18 (20·7 per cent.) had teeth free from caries, while not a few mouths were in appallingly diseased and unhygienic condition. This I think considerably strengthens the belief that the adoption of European diet and habits of life increases the tendency to caries, and it is obvious that with such a high percentage many pathogenic micro-organisms must gain entrance into the system. Those gain an entrance either through the pulps of carious teeth, wounds in the mouth, or through the infective material in or around the teeth being transferred to the alimentary canal, and I am convinced that much of the ill-health and many of the diseases from which they suffer result from the diseases of the teeth and the unhealthy and unhygienic state of the mouth associated therewith. As much conservation work was done amongst them as the limited time at my disposal permitted, but I was quite unable to deal adequately with the large numbers that required conservative treatment, and the whole tour might, with advantage, have been spent in the one Colony.

3. Although the working conditions in Sierra Leone approach more nearly to those existing in England, there are, however, many difficulties in the way of successful dental work, while want of proper accommodation, the limited time at my disposal, and the lack of any mechanical assistance are heavy handicaps. It is to be hoped that in the new hospital which is going to be built ample accommodation will be provided for the dental department,

in order that this increasing and important branch of the hospital's work may not suffer. I have every reason for believing that the work done has been appreciated both by Europeans and Natives, and I must express my thanks to the Medical Staff for their assistance and hearty co-operation.

I have, etc.,

(Signed) H. F. HARDIE.

The Honourable

The Principal Medical Officer,

Freetown.

ANNUAL MEDICAL REPORT ON THE PRISON, 1913.

The year started badly, 10 cases of Beriberi remaining from the 1912 outbreak of this disease. Seventeen more became affected, and 5 deaths resulted. During the month of March a severe outbreak of Chicken-Pox occurred, and 1 death ensued, due to secondary Pneumonia.

Beyond these two epidemics, the health of the Prison has been very good. The female prisoners are still in the old Prison, but their new quarters are nearing completion, so that their removal to the new Prison will be at no distant date.

During the last three months of the year a special examination was made of the intestinal worms and ova thereof, and it was found that the Ankylostome percentage was 41 per cent.

It was also found that the percentage of Gonorrhœa amongst the male prisoners was at least 80 per cent.

Eight executions have been satisfactorily and humanely carried out.

There were 18 deaths during the year from natural causes :—

Beriberi	...	...	...	...	...	...	5
Cardiac Failure	(a)	Mitral Regurgitation	...	...	2	} 5	
	(b)	Aortic Regurgitation	...	...	2		
	(c)	Gonorrhœal Rheumatism	...	...	1		
Broncho-Pneumonia after Chicken-Pox	...	...	...	...	...	1	
Pulmonary Tuberculosis	...	...	...	...	...	1	
Senile Decay and Debility	...	...	...	...	...	1	
Chronic Bacillary Dysentery (prisoners were suffering on admission)	...	...	...	...	...	2	
Acute Strangulation, small Intestine (verified at P.M.)	...	...	...	...	...	1	
Interstitial Nephritis	...	...	...	...	...	1	
Tuberculous Peritonitis (verified by post-mortem)	...	...	...	...	...	1	
Total ...						18	

The sanitary arrangements are very satisfactory.

(Signed) W. A. YOUNG,

Medical Officer, Prison.

January 6th, 1914.

EXAMINATION OF 178 URINES OF PRISONERS IN FREETOWN PRISON.

A.

Number showing absence of Albumen, 141.

These may be sub-divided as follows :—

Giving a history of Gonorrhœa 1 year ago	14
„ „ „ more than 1 year ago	36
„ „ „ less than 1 „ „	29
Denying having had Gonorrhœa at any time	28
Giving an indefinite history	34

In these 28 cases denying a previous history of Gonorrhœa no strictures were found, and the ordeal of catheterisation elicited no evidence in contravention of their statements.

B.

Number of cases showing faint trace of Albumen, 27. These were recent cases of Gonorrhœa, either suffering at the time or else just before entry to prison, except three cases, which gave a history of over one year. None of those cases showed the presence of casts, though many showed leucocytes.

C.

One case showed faint trace of Albumen, but he strongly denied Gonorrhœa, and no stricture was found, neither were casts found.

D.

Number of cases showing large cloud of Albumen, 9.

These are made up as follows :—

Cystitis cases, admitting old Gonorrhœa and showing no usual casts, 2; Bright's disease, showing casts and history and clinical picture of Bright's, and denying Gonorrhœa, 1; due to Acute Gonorrhœa, 5; due to Cystitis caused by (*Bilharzia Hæmatobia*) *Schistosomum Hæmatobium*, 1; total, 178.

E.

Disregarding the 34 unsatisfactory cases, there remains 144; percentage having Gonorrhœa, 80·55 per cent.; percentage not having, nor having had Gonorrhœa, 19·45 per cent. Of those having Gonorrhœa, *i.e.*, of 116, 79 show absence of Albumen, *i.e.*, 68·1 per cent.; 37 show Albumen, 31·9 per cent.

LABORATORY,
COLONIAL HOSPITAL.

To the Honourable the Principal Medical Officer.

From Medical Officer, Prison.

Sir,

I have the honour to report on the examination of 253 specimens of Fæces from 252 prisoners, during the months of October, November and December.

The first table gives the results for newcomers to the prison; the second for prisoners who have been in the jail for one year or longer periods. Table three gives the list showing racial statistics. In each case the percentage for Ankylostomes is given. These percentages can only be of value where larger numbers have been examined, and thus the Timnee percentage may be regarded as fairly near the truth.

Compared with the Colonial Hospital Ankylostome percentage for in-patients, *i.e.*, 25·5 per cent., the prison one is far higher. Probably this may be accounted for in this way: The Hospital patients have amongst their numbers many Government Native Officials, and others who have adopted European dress and diet to a considerable extent; also there are many women patients, and their percentage is much lower than for the male portion.

Taking the factors into consideration with the fact that the prisoners go about bare footed (skin entry) will help to reconcile the two percentages given, *i.e.*—

Prison, 41 per cent.
Hospital, 25·5 per cent.

FÆCES.

TABLE 1.—NEW COMERS.							TABLE 2.—OLD CONVICTS.	
Kind of Ova.							No. of Cases.	
Negative							90	28
Ankylostome							53	25
Ascaris							16	8
Ankylostome and Ascaris							7	3
Ankylostome and Trichocephalus Dispar							2	3
Tænia Saginata							1	
Tænia Saginata and Strongyloides Larva							1	
Ascaris and Strongyloides Larva							2	
Ankylostome and Strongyloides Larva... ..							1	2
Trichocephalus Dispar							3	2
Strongyloides Larva							3	
Trichocephalus Dispar, Ascaris, and Ankylostome, also had Bilharzia Hæmatobia Ova in urine, (Schistosomum Hæmatobium)							1	
Trichocephalus Dispar, Ascaris, and Strongyloides Larva							1	
Total							181	71
No. of cases where Ankylostome Ova present							64	33
Percentage							= 35·5%	Percentage = 46·5%
							Therefore average per cent of Ankylostome = 41%	

TABLE 3.

Kind of Ova.	Mendi.	Timnee.	Creole.	Limbah.	Susu.	Kroo.	Madingo.	Aku.	Connor.	Congo.	Bana.	Fulani
Negative	20	55	8	6	10	3	4	1	2	2	3	2
Ankylostome	12	40	10	9	5	0	0	2	0	0	1	0
Ascaris	6	10	1	2	4	0	0	0	0	0	0	0
Ankylostome and Ascaris	4	3	2	0	1	0	0	0	0	0	0	0
Ankylostome and Trich. Dispar	1	0	1	2	0	1	1	0	0	0	0	0
Tænia Saginata	0	1	0	0	0	0	0	0	0	0	0	0
Saginata and Strongyloides Larva	0	0	1	0	0	0	0	0	0	0	0	0
Ascaris and Strongyloides Larva	2	1	0	0	0	0	0	0	0	0	0	0
Ankylostome and Strongyloides Larva	1	1	0	0	1	0	0	0	0	0	0	0
Trichocephalus Dispar	2	2	1	0	0	0	0	0	0	0	0	0
Strongyloides Larva	1	1	0	0	0	0	0	0	0	0	0	0
T. Dispar, Ascaris, and Ankyl.	0	1	0	0	0	0	0	0	0	0	0	0
T. Dispar, Ascaris, and Strongyloides Larva	0	0	0	0	0	0	0	0	0	0	0	0
Totals	49	115	24	19	21	4	5	3	2	2	4	2
Ankylostome Ova per-centage	38·7%	39·1%	54·1%	57·9%	33·1%	33·1%	20%	66·2%	—	—	25%	—

I have, etc.,
January 1st, 1914. (Signed) W. A. YOUNG.

CLINE TOWN RAILWAY RESERVE AND DISPENSARY REPORT FOR THE YEAR 1913.

The Railway Reserve consists, from a medical and sanitary point of view, of "Yards" and Residential Quarters.

The "Yards" consist of the Maintenance Yard, the Loco. Yard and the Stores Yard. These "Yards" appear at first sight to be extremely difficult to keep free of mosquito larvæ and puddles of water, owing to the quantity of iron fittings, wheels, rails, sleepers and various parts of all shapes and sizes, which are stored in them, many of which collect rain in the wet season. The officials in charge of the yards exercise great care and thought in the stacking of these parts. Although I have frequently inspected the yards during the wet season, I have only once found larvæ (*stegomyia*). There are many surface drains, most of them being deep and lined with cement, and some being cut in the natural rock; and these effectively prevent pools of water collecting for any considerable time during the rains. A sanitary gang attends to the general cleanliness and brushing of the yards and compounds. An incinerator is used for destroying refuse which can be burnt, whilst refuse which is incombustible, and also the contents of the latrine buckets, are buried in a trenching ground. Last year tins and other litter were lying about the yards a great deal, owing to the fact that the native workmen had their meals and cooked their food individually and in various parts of the yard. This year they have been instructed to have their meals all together and in one place, and their food is all cooked in one place by one man; thus a much cleaner condition of the yards as regards tins, etc., results. Next year I understand a Mess-room is to be erected for them.

The Residential Quarters consist of eight First Class Officials' Quarters, one of these being situated outside the reserve, another being over the platform offices. The Second Class Officials' Quarters consist of eight in the portion of the reserve on the Freetown side of the railway line and fifteen in a compound off the cemetery road near the cemetery—the Fitters' Quarters.

The latrines of the second class quarters are in most cases situated outside the houses.

The Water Supply to the quarters is from two sources, namely, the Cline Town water and Mountain Torrent. The supply pipes of the two waters are connected up and controlled by taps in such a way that if, during the dry season, the Cline Town water runs short, then those quarters that usually have Cline Town water can get Mountain Torrent water instead.

The Mountain Torrent water is from an unprotected source, and is liable to pollution from the washing of clothes which takes place in it. In the early part of the wet season nearly every official on the Freetown side of the railway line, all of whom were drinking this water, suffered from an attack of Diarrhoea and Sickness; in most of these cases the attacks were not serious, only a few having actually to go on the sick-list. The attacks all took place, roughly speaking, at the same time, and afterwards there were no further attacks. In consequence, the question of Mountain Torrent water is now under consideration. It was originally laid on to supply the engine sheds, and not for drinking purposes, although it is a very palatable water.

SICKNESS AMONGST EUROPEAN OFFICIALS.

The average number of European Officials residing in the Reserve is thirty, including First and Second Class Officials. The following list consists of those cases which necessitated the patient being placed on the

sick list, and does not include slight ailments, where treatment was given while the officer continued his duties.

<i>Malaria</i>	...	...	...	19 cases (17 subtertian, 1 quartan, 1 diagnosed clinically).
<i>Gastro-enteritis</i>	...	...	...	9 „
<i>Gastritis</i>	...	...	...	2 „
<i>Constipation</i>	...	...	...	2 „
<i>Dyspepsia</i>	...	...	...	1 case (invalided).
<i>Dysentery</i>	...	...	...	1 „ (probably bacillary, as no amœbæ were discovered).
<i>Tonsillitis</i>	...	...	...	1 „
<i>Tuberculosis of lungs</i>	...	...	...	1 „ (invalided).
<i>Bronchial catarrh</i>	...	...	...	1 „
<i>Sub-acute rheumatism</i>	...	...	...	2 cases
<i>Neurasthenia</i>	...	...	...	1 case
<i>Nervous debility</i>	...	...	...	1 „
<i>Urticaria</i>	...	...	...	1 „
<i>Pyrexia of uncertain origin</i>	...	...	...	1 „

The highest Sick Returns were in June, July and August, the beginning of the rains, thirteen of the Malaria cases occurring then and twenty-three out of the forty-three cases of sickness.

THE DISPENSARY.

The Dispensary was opened on November 1st, 1913. The building is situate in Ross Road, at the back of the Police Station, and consists of one building, divided into three rooms. The first, which is fitted with shelves and has water laid on, is used as the Dispensing Room; the middle room is a smaller room with a bench bed in it, and is suitable for examining or detaining a case, pending arrangements for removal to the hospital; the third room is the consulting room. Outside is a covered verandah for the patients to wait in. Behind the main building is a two-roomed house for the Dispenser, also a kitchen, latrine, etc.

The Dispensary is used for Government officials residing near, chiefly those connected with the railway, and also for non-official natives residing in Cline Town and the district on the Cline Town side of Kissy Road Police Station.

The following gives the number of patients seen at the Dispensary since it was opened :—

	November.	December.	Total
Number of new cases	263	485	748
Subsequent attendances	73	298	371
Total seen	336	783	1,119

Average per day nearly 23.

NATIVE GOVERNMENT OFFICIALS.

Of the total number of new cases, 748, the number of native officials was 185.

November	100	24 of whom were on Sick List.
December	85	12 „ „ „

The majority of these 185 cases were minor ailments, such as constipation, colds, vague pains in the arms, legs, back and chest, possibly of a rheumatic nature, and some injuries.

KISSY INSTITUTIONS.

Lunatic Asylum.—On the first day of the year this Institution contained 74 male and 41 female lunatics; 33 male and 10 female lunatics were admitted during the year, making a total of 158 under treatment, an increase of 16 patients over the previous year.

Of these, 17 were relieved and discharged, 1 absconded, and 23 died, leaving a total of 117 patients at the end of the year.

The deaths were due to Nephritis, Epilepsy, General Dropsy, Heart Failure, Ankylostomiasis, Diarrhœa, Dysentery, General Paralysis and Exhaustion.

No epidemic occurred, and there were no accidents throughout the year.

Some of the male lunatics were employed in gardening and in sanitary work, whilst a few of the females did laundry and needle work.

Female Incurable Hospital.—At the beginning of the year there were 24 patients in the hospital, and 57 were admitted during the year; 33 patients were discharged, and 19 deaths occurred due to Hemiplegia, Epilepsy, Syphilis, Heart Failure, Exhaustion, Chronic Rheumatism, Dysentery and Senility. On the last day of the year 29 patients remained.

Male Incurable Hospital.—There were 69 patients at the beginning of the year, 100 were admitted, 8 were discharged as cured, 19 were relieved and discharged, 28 absconded, and 44 died, the principal causes of death were Senility, Diarrhœa, Syphilis, Chronic Ulcer, Ascites, Nephritis, Exhaustion, Hemiplegia.

Leper Asylum.—At the beginning of the year there were 3 patients, 10 were admitted, 1 died and 10 absconded.

Infectious Diseases Hospital.—During the year 19 cases of varicella were admitted, of whom 1 died and 18 were discharged.

Lazaretto.—During the year 12 prisoners suffering from Beriberi were accommodated at this Institution.

<i>Kissy Dispensary.</i> —New cases	...	...	...	...	...	1,417
Subsequent attendances	...	...	...	...	...	1,454
					Total ...	2,871

An increase of 567 over the total for 1912.

<i>Wellington Dispensary.</i> —New cases	...	...	...	...	537
Subsequent attendances	...	...	...	...	951
				Total ...	1,488

THE BONTHE DISTRICT.

Two European Officials are stationed at Bonthe, neither of whom was on the sick list during the year.

The health of the Native Officials was good; their total attendances amounted to 210, and the chief causes of illness were Rheumatism, Tonsillitis and injuries.

The non-official Europeans totalled 48, and 36 Syrians were resident in Bonthe during this year. The chief cause of illness amongst the above was intermittent fever. There were three cases of blackwater fever, of which two were fatal.

BONTHE HOSPITAL.

Out-Patients.—During the year 1,036 new cases were seen, and there were 816 subsequent attendances.

The principal causes of illness were syphilis, gonorrhœa, dental caries, dyspepsia, bronchitis, constipation, rheumatism, ulcer and malaria.

In-Patients.—Fifty-four in-patients were admitted to the hospital, and there were four deaths, the causes being peritonitis, elephantiasis, blackwater fever and fracture of the base of the skull.

The hospital fees amounted to £14. 10s. 5d.

Prison.—The health of the prisoners has been good, and the building and compound were kept in good order.

York Island.—This dispensary was visited once a week, and 107 cases were treated.

ANNUAL REPORT OF THE NORTHERN SHERBRO DISTRICT.

I took over the district from Dr. Pearson on June 21st last. The headquarters of the Medical Officer had a week previously been moved from Gbangbama to Mattru. This was due to the fact that a Company of the West African Frontier Force had recently been stationed there, owing to the disturbed state of that part of the country.

The barracks at Mattru were only a part of the old town, and consequently were very irregularly laid out. Rubbish was disposed of by having pits dug, and all bottles, ashes, etc., thrown into them. Earth was thrown in frequently, and the pits were inspected every Saturday, as well as at irregular intervals during the week. As each pit filled it was covered over with at least two feet of earth.

The pit system of latrines was used. These were dug about 50 yards away from the barrack fence on ground sloping away from it. Dry earth was thrown into these every morning, and they were inspected frequently.

Water was obtained from two streams flowing into the Jong River. The one that supplied water for the men flowed into the river at the west side of the barracks, and the one from which the officers' water was taken flowed at the east side. The water in both cases was taken from well up stream, and was always clear and free from any deposit. The drinking water for the mess was always carefully filtered.

The health of the European officers was on the whole good, there being no cases of serious illness. There were a number of cases of intermittent fever amongst the Frontiers. This was probably due to the fact of it being the rainy season, and that most of the houses were not watertight. The country all round Mattru is very low lying, and for the greater part of the months spent there was under water.

The Company from Mattru was recalled to Daru at the end of November and another Company was sent down to Bandajuma.

The barracks at Bandajuma have been laid out under the advice and direction of the Sanitary Department on some high ground about 300 yards from the river. The ground here falls 50 feet to the river level. The lines for the men have been placed on one side of the road to Pujehun, and the officers' quarters on the other. Lieutenant R. M. S. Baynes has kindly made the attached sketch map for me.

The water supply is from a stream flowing into the river higher up than the camp. All precautions are taken as to filtering the drinking water for the use of the European officers.

The pit system of latrines is in use. There are four of these—one for the officers, one for the men, one for women and one for servants.

Rubbish pits have been dug at the back of each kitchen. The official headquarters of the district is at Pujehun, and the Public Works Department have been building permanent houses there. The houses for the District Commissioner and for the Assistant District Commissioner are nearly finished, and the hospital and house for the Medical Officer ought to be finished by the end of January.

The water supply for these new houses is from two sources. One, a large tank, has been supplied for storing rain water. These tanks are connected to the baths by pipes. The other supply is from a well which is cemented down for 20 feet from the top. This well is to be completely covered over by a cement top having a water raising apparatus let in to it. The water from this well is clear and free from sediment, but inclined to be hard.

All the houses are supplied with earth closets. The health of the officials has been on the whole good. There was no case of serious illness or invaliding amongst them during the year. There were two cases of blackwater fever, both of which occurred in European traders at Deah. The first was taken down to Bonthe and died there, and the other died at Deah under my care. Mr. H. M. Neville has been in charge at Pujehun during the year as Dispenser there, while Mr. M. P. Neville has moved with the Medical Officer.

There have been 5,051 cases treated in the district during the year. Nearly all these were treated as external patients, as there was no hospital accommodation at either of the stations. All the internal patients given in the various reports were treated in their own homes.

There were 579 persons vaccinated during the year, and of these 550 were successful.

(Signed) W. A. NICHOLSON,
Medical Officer.

BANDAJUMA,
January 17th, 1914.

ANNUAL MEDICAL REPORT FOR MOYAMBA, 1913.

I have the honour to forward the Annual Report of this station as follows :—

This station was under the care of Dr. Allan up to the 4th of October, when I relieved him. Dispenser S. B. Williams was the dispenser in charge for the year.

Health of Europeans.—This has been good. In all five were placed on the Official Sick List; of these two were sent to the Nursing Home. There were no deaths. Of non-officials only two cases were treated, one a case of blackwater fever, which recovered. The health of the Syrians, as usual, was poor; there was one case of blackwater fever, but no deaths.

Health of Native Officials.—Thirty-one were placed on the Sick List for an average of 4·2 days each.

In-Patients.—There was an increase in this department, the total number attended being 113, as compared with 94 of last year. There were three deaths as under :—

- (1) Liver abscess.
- (2) Fracture of base of skull.
- (3) Diarrhœa.

Out-Patients.—1,915 new cases were attended, and there were 2,012 subsequent attendances, making a total of 3,927 cases.

Fees.—The sum of £4 was collected in fees, as against £3. 16s. 3d. of last year.

Operations.—Thirteen operations were performed under a general anæsthetic; there was one death.

Sanitation.—The usual dry-earth system is in use by the officials. New drains and a cement culvert have been made, with the idea of improving the present insanitary condition of the Gaol. The town is being kept in a satisfactory state of cleanliness.

Vaccinations.—839 were performed; of these 89 were successful, 6 unsuccessful and 744 not examined.

Meteorological Observations.—The highest maximum temperature recorded was 100° on March 30th. The lowest minimum was 58° on January 20th. The greatest range of temperature was 36°, also on that date. The greatest rainfall in one day was 4.48 inches, on July 29th.

General.—The new quarters for the Medical Officer are nearly completed, and a four-roomed bungalow for the District Commissioner is in process of construction. Water is laid on to these buildings, and also to that of the Assistant District Commissioners. Being situated as they are on a hill about half a mile from the town and barracks, it is only to be expected that a marked improvement in the health of these officials is anticipated.

I have the honour to be, Sir,

Your obedient servant,

(Signed) W. C. BOWER.

ANNUAL MEDICAL REPORT FOR 1913.

DISPENSARY—RAILWAY EXTENSION.

MAKUMP.

Dispenser Hedd relieved Dispenser Buck July 12th, 1913.

European Staff.—The number of Europeans working on construction was 26. The total number of days of patients on sick list was 48.

Number of patients, 11. One patient was invalided, suffering from liver abscess.

Main causes of illness, intermittent fever.

The general health was good.

Native Staff.—Eight in number. Number of days ill, 54. Health, fair.

Out-Patients.—There were 2,086 new cases and 1,098 subsequent attendances, making a total of 3,184.

The principal diseases were minor casualties, bronchial affections, gonorrhœa and muscular rheumatism.

In-Patients.—These numbered 42, mainly wounds; there was one death, due to septic pneumonia following gunshot wound of chest. Four operations were performed during the year.

Local Anæsthesia.—(1) Removal of piece of glass from buttock. (2) Tapping case of ascites.

Chloroform.—(3) Trimming gunshot wound of hand. (4) Removal of fibroma of breast.

Vaccination.—231 were vaccinated; 107 successful, 47 unsuccessful, 77 not seen.

Sanitation.—Compounds were kept cleaned; tins and refuse were put in a pit dug for the purpose.

Latrines were of the pail and dry-earth system.

Water is derived from a well which is covered; all water is boiled and filtered before use.

(Signed) E. J. POWELL,

MAKUMP,

January 19th, 1914.

Medical Officer.

ANNUAL MEDICAL REPORT FOR BO, 1913.

I have the honour to submit the Annual Medical Report for Bo and Kennema.

The stations were in charge of Dr. Arbuckle until March, when he was relieved by Dr. McConaghy. He was invalided in November, when I took over.

At present there are resident in the district 17 European officials and 23 non-officials.

During the year 1,906 out-patients attended Bo Dispensary, an increase of 146 on last year's total. The chief complaints were constipation, bronchitis, rheumatism and fever. Out-patients' payments amounted to £4. 16s. 6d.

Ninety-five patients were admitted to Hospital. Three operations were performed for elephantiasis, tumour of hand and compound fracture. The Hospital was entirely rebuilt during the year, and now consists of a large two-roomed native house.

The health of the European officials has been good. There have been 21 entries on the sick list, with an average of 8·2 days. The commonest cause of sickness was malarial fever. One death occurred from acute dysentery.

Among the Sierra Leone officials there were 22 entries on the sick list, with an average duration of five days.

Bo School.—About 80 boys have been resident during the year at the School. The general health is very good. One pupil died from some obscure disease with jaundice. The boys are inspected frequently, and by this means many cases of skin diseases, etc., are detected among the smaller boys. An average of about four boys report sick daily, but as a rule their complaints are very trifling.

Until April 17th two companies of the Gold Coast West African Frontier Force were stationed at Bo, along with eight European officers.

During the year the Medical Officer has paid weekly visits to Kennema, and has inspected the Gaol, Court Messengers' lines and European compounds.

(Signed) ROBERT SEMPLE,

Medical Officer.

Bo, January 14th, 1914.

ANNUAL REPORT FOR DARU, 1913.

The district during the year 1913 has been in charge of Drs. Powell, Semple and Mayhew.

Dispenser P. J. John has been attached to the Hospital all the year.

The health of the European officials has been good. Twenty-one officers have been in residence for varying periods. There have been seven cases of malarial fever, all of them slight attacks, with a total period of 25 days on the sick list. Other cases were varicose veins, gastritis, pleurisy, conjunctivitis, septic ulcers of legs.

Three platelayers have been stationed at Daru at various times and two at Hangha; none of these have been on the sick list.

The quarters are kept in good order; those at Hangha have been repainted.

At Pendembu quarters have been built for engine drivers.

Fourteen native officials were placed on the sick list during the year, the causes being :—

Malarial fever	...	...	...	...	...	...	6
Venereal	...	...	...	...	...	...	3
Dysentery	...	...	...	...	...	...	1
Diarrhœa	...	...	...	...	...	...	1
Chronic nephritis	...	...	...	...	...	...	1
Pulmonary tuberculosis	...	...	...	...	...	...	1
Hepatitis	...	...	...	...	...	...	1

The cases of dysentery and tuberculosis came from Segbwema, where the Native Railway Officials' quarters are in a swamp.

The number of cases treated at the Out-Patient Department at the Hospital amounted to 2,271, with subsequent attendances of 977, making a total of 3,248 for the year. Of these 1,729 were soldiers and 918 were civilians.

The chief diseases among the soldiers were :—Constipation, gonorrhœa, fever, bronchitis, rheumatism of muscles and joints, wounds. Amongst the civilians :—Ulcers, fever, bronchitis, constipation.

Two cases of leprosy were seen, one of ainhum, one of bilharzia hæmatobia, one of epithelioma of the thumb, one of myeloid sarcoma of the lower jaw.

The out-patient receipts amounted to £9. 3s. 9d.

There were 314 admissions to Hospital. The chief causes were :—

Fever	...	...	...	...	...	...	62
Gonorrhœa and complications	...	...	...	...	...	...	56
Dysentery	„	„	...	...	...	...	31

In the case of the last named, amœbæ were seen in the stools, which were examined microscopically. Emetine was used with marked success.

There were two deaths in Hospital, both civilians; one after an operation for elephantiasis scroti, the patient having a stroke whilst under the chloroform; the other, a boy, who died five hours after admission.

There were eight cases of invaliding amongst the soldiers, the causes being :—

Morbus cordis	...	...	...	...	...	...	2
Gonorrhœal arthritis	...	...	...	...	...	...	2
Trypanosomiasis	...	...	...	...	...	...	1
Pyorrhœa alveolaris	...	...	...	...	...	...	1
Amblyopia	...	...	...	...	...	...	1
Prolonged fever (? cause)	...	...	...	...	...	...	1

The cases of trypanosomiasis and prolonged fever died shortly after their discharge.

During the year a Major operation case, a sterilizer and a Primus stove have been added to the equipment.

The average number of European civilians resident in the district was 27. The health of these was good; the various diseases treated were :—

Malarial fever	...	...	...	...	...	...	3
Venereal	...	...	...	...	...	...	2
Skin	...	...	...	...	...	...	2
Anæmia	...	...	...	...	...	...	1
Pericarditis	...	...	...	...	...	...	1
Dysentery	...	...	...	...	...	...	1
Chronic arthritis	...	...	...	...	...	...	1
Debility	...	...	...	...	...	...	2

One was invalided for anæmia, associated with pyorrhœa alveolaris.

Two hundred and seventy-one vaccinations were carried out during the year; of these 152 were successful, 44 unsuccessful, 75 not seen. Both dried lymph in glycerine and lanolinated calf lymph gave good results when used within two weeks of being received; after that time the effect diminished. The total was not so large as last year's. The number vaccinated in the various towns depends largely on the goodwill of the chief.

Patrols were made in the district every month, extending over 99 days. Skin complaints and ulcers were the commonest diseases noticed. A few cases of leprosy were seen in fakais off the beaten track. Periostitis, necrosis of the cranial bones, epiphysitis in a young infant, spreading ulceration of the skin, point to the presence of syphilis amongst the natives. In many of the towns, if questions are asked, one or two individuals are produced who are stated to sleep too much, and who have enlarged cervical glands.

The rainfall for the year has been practically the same as last year's, 96·59 ins. as against 96·24 ins. The highest recorded shade temperature was 105° on February 22nd, and the lowest 58° on January 19th.

E. H. MAYHEW,
Medical Officer.

KANRE LAHUN.

The Dispensary during the year has been in the charge of Dispenser Nylander.

Three Officers and a Company of the West African Frontier Force have been stationed there; in addition, there is a Native Company Clerk and a Telegraph Clerk.

The health of the troops has been fair; venereal disease accounts for the majority of the cases treated in the Hospital: the proximity of the large native town probably has to do with a large proportion of these.

The lines at the top of hill are kept in good order, one stream runs round the hill on the south, south-east and east, and another on the north-west.

The water for drinking purposes mostly comes from a spring at the foot of the hill, to the north.

The Dispensary is a native hut.

The total number of cases treated during the year was 3,127, of which number 1,115 were new. Of these 717 were civilians, a very encouraging state of affairs, considering that the Dispensary has only been in existence for two years. The majority of these were Mendis and Kissis.

The chief diseases amongst the soldiers were:—Constipation, fever, gonorrhœa, bronchitis, rheumatism of muscles and joints. Amongst the civilians:—Constipation, ulcers, bronchitis, gonorrhœa, diseases of the skin. Leprosy is fairly common; a few cases of elephantiasis scroti were seen. Cases of spreading ulceration of the skin were frequent—probably syphilitic.

In May the station was visited by the Inspector-General of the West African Frontier Force, and in October by the Principal Medical Officer.

The town itself is kept fairly clean, the dirtiest compounds being those of the non-natives, but the outskirts of the town are not brushed as they should be. The water supply is either from the streams aforementioned, or from wells sunk in a marsh.

No cases of trypanosomiasis have been recorded, nor of small-pox.

(Signed) E. H. MAYHEW,
Medical Officer.

ANNUAL REPORT FOR BATKANU STATION FOR THE YEAR ENDED 31ST DECEMBER, 1913.

During the past year the station has been in charge of the following Medical Officers:—Dr. Bower, Dr. Fleming and Dr. Orpen, the last since the month of May.

The general health of the station for the past year has not been good.

1. *European Staff*.—This generally consists of the District Commissioner and Medical Officer, and at times an Assistant District Commissioner.

During the year three officials were invalided for the following causes:—

1. Gunshot injury.
- 2 & 3. Neurasthenia.

One non-official European who was visiting the station died of peritonitis.

2. *Native Official Staff*.—The total strength of the Native Official Staff numbered 48.

The health of the above has been fair.

Total number of days spent on the sick list was 307, this gives a percentage per man of 6·4 days.

During the year two Court Messengers were invalided out of the service, one suffering from chronic rheumatism, the other from extreme weakness and anæmia produced by ankylostomiasis. The chief causes of sickness amongst the Native Official Staff were malaria, bronchial affections and abscess.

3. *Hospital*.—(a) In-patients numbered 28, last year 47. There were two deaths in hospital, the cause of death being:—1, hemiplegia and exhaustion; 2, peritonitis and secondary hæmorrhage.

(b) *Out-patients*.—The number of patients seen at the Dispensary for the past year was 1,120, this compared with 1912 shows a diminution of 157, subsequent attendances were 2,093, which when compared with 1912 shows a falling off of 393. Total attendances for the year 1913 were 3,213, for the year 1912 3,763, this shows a falling off of total patients seen during the past year of 550.

The chief diseases seen at the Hospital were digestive disorders, syphilis, worms, malaria, wounds, conjunctivitis, chronic rheumatism and ulcers.

(c) *Special Diseases*.—Malaria shows a slight falling off in comparison to the number recorded in 1912. The number seen for this year was 21, last year 26. In all cases when a patient came complaining of fever a blood

examination was made, and in the majority of cases the malaria parasite was found.

Syphilis.—The number of cases attending at the Dispensary is apparently smaller than in previous years. I forward a chart I have made which shows the number of cases seen since the year 1907. This chart also shows the percentage of syphilis cases to the total number of cases attending the Dispensary each month. Of course this chart is no true criterion of the prevalence of syphilis, it only shows that a smaller number attended hospital. The great majority of cases were tertiary. I have only seen one case that I felt certain was hereditary. I note in the records that two others have been recorded by Dr. Bower. It is somewhat strange that one does not see more of these cases, as without doubt syphilis is a common disease in this country.

Leprosy.—During the year only four cases were seen, one of these attending the out-patient department, the others were seen on patrol. The varieties were : Anæsthetic, 1; mixed, 2; nodular, 1. This disease apparently is not very common in the Karene District.

Trypanosomiasis.—No case was noted during the past year.

4. *Port-Lokko*.—In the month of May a Dispensary was opened at Port-Lokko and placed in charge of Dispenser Hooker. The Medical Officer at Batkanu has paid visits to this station frequently since that date. I fancy that this station will show a large number of attendances, the reports being forwarded by the dispenser in charge.

5. *Vaccinations*.—The number of vaccinations carried out during the year was 309. This shows a decrease in numbers of 568. In explanation of this reduction, I may say that I have found when I was on patrol, especially to the north and north-west of this district, that the people had a very great objection to vaccination, and the moment the subject was mentioned the people gradually disappeared. At the same time I endeavoured to find out the reason of their objection, but could never get a satisfactory one.

Vaccinations in 1912, 877; successful, 646; not seen, 231.

Do. 1913, 309; do. 210; do. 47; unsuccessful, 52.

6. *Patrols*.—Eight patrols were made to various parts of the district, making a total number of days on patrol 109; average patrol 13 days. Vaccination, splenic index and sanitary inspection of towns was the work carried out. On patrol numbers of cases were seen and treated, the cases being of the same kind as seen at the Batkanu Hospital.

7. *Epidemics*.—During the past year there was a slight epidemic of chicken-pox, and there was one case of small-pox.

8. *Hospital Fees*.—These show a considerable increase over last year. Fees, 1912, 18s. 2d.; fees, 1913, £2. 18s. 9d.; an increase of £2. 0s. 7d. An effort was made to make people pay some small fee for medicine.

9. *Visit of Principal Medical Officer*.—In the month of June the station was visited by the Principal Medical Officer (Dr. Forde), and in consequence of his visit the Hospital was painted.

10. *Meteorological Observations*.—These have been carried out during the past year. The rainfall for the year was 103·75 inches; the highest temperature was 99·8° and the lowest 60·0°.

11. *Sanitation*.—This has been dealt with in a separate report.

R. W. ORPEN,
Medical Officer.

BATKANU, KARENE DISTRICT,

1st January, 1914.

[225957]

REPORT ON KOINADUGU DISTRICT FOR THE YEAR 1913.

Throughout the year Dr. Wood was in charge with J. Fewry as Dispenser.

General Health.—I regret to report that this has not been so good as usual, malaria being prevalent among all ranks. There was no death and no invaliding among the staff.

The total number of white officials, including reliefs, was three, one of these being on the sick list from malaria for five days.

Of the subordinate staff three were on the sick list from the same cause for a total of 15 days. Malaria was also rife among the Court Messengers and their families in the barracks.

In-Patients.—Two remained in from 1912, 21 were admitted, making 23 for the year, 1 remaining in at the end of the year. Total number of days beds were occupied was 715. This is a very considerable increase over last year, and indeed any year since the removal of the Frontier Companies.

Eleven operations were performed, chiefly major, including :—

Radical cure of hernia	...	...	...	...	...	...	...	...	4
Radical cure of double hydrocele (removal of testicle where necessary)									4
Amputation of elephantoid scrotum	...	...	...	...	...	...	...	...	2

All these were very large operations. There was one death. One circumcision for phimosis was done.

Out-Patients.—The number of new cases was practically the same as last year being 826. Old cases or subsequent attendances were 476, making altogether 1,302. It is still difficult to get patients to attend regularly for treatment. Some years will probably elapse yet before the Natives of the district really gain confidence in the European doctor, and on this account it was not thought advisable to make any charge for medicines except in the case of traders or strangers from other districts.

Diseases in order of frequency :—

Bronchitis, rheumatism, skin diseases and ulcers, dyspepsia, sore throats, malaria.

Veneral Disease.—This is rapidly on the increase, probably owing to the opening up of the district by the railway and by traders. A case of congenital syphilis was seen.

Trypanosomiasis.—Several cases were seen and reported on. (See Annual Reports for 1909, 1910, 1912.)

Small-pox.—No cases were seen. A reported outbreak proved on personal investigation to be chicken-pox, and the deaths those of young children.

Malaria.—Forty-four cases were seen in Kaballa, besides a large number on patrol, nearly all being verified by the microscope. Practically all were æstivo-autumnal.

Vaccination.—823 successful.

396 unsuccessful.

38 not seen.

1,257 total.

A considerable advance on former years.

Certain chiefdoms are still reluctant, but among the Limbas, especially the more enlightened Biriwas and Safrokos, the chiefs and people are so ready for it that very many more could have been done had sufficiently lymph been available. The belief was current through a great part of the district that the outbreak of chicken-pox is always followed by the more deadly disease, which a few years ago came in yearly epidemics.

Meteorological.—Observations were taken throughout the year.

The highest maximum was 102·27 on March 30th, the lowest minimum 53·0 on August 9th. The total rainfall was 87·47 inches, the highest on one day being 3·7 inches on October 18th.

Sanitation, Kaballa.—Very great improvements have been carried out in the station. The burning down of the barracks gave the opportunity to enlarge the space very considerably, twenty yards being allowed between any two of the huts. A wide space was cleared all round and a hedge planted, no grass or bush being allowed to grow inside. Gardens near the huts were done away with. Rubbish pits were dug and no rubbish of any description was allowed to be thrown down anywhere near the barracks. Other improvements were carried out also. All borrow pits in or near the station were carefully filled in, and a strict watch kept for possible breeding place for mosquitoes. Unfortunately, there is a large swamp within 100 yards of the barracks, and this and other swamps on the other side of the hill are within 400 yards of the European quarters on the top of the hill. The Commissioner considers it impracticable to drain these at present. The usual house mosquitoes in Kaballa are *Anopheles Costalis*, but *Funestus* and *Rhodesiensis* larvæ were found in the swamps, but nowhere else, in spite of the most careful constant search.

A sanitary gang of three or four men were employed during the year, and these, with the assistance of fatigue parties of Court Messengers and prisoners on hard labour, of whom there were an unusually large number throughout the year, kept the station in model condition right through the rains, when sanitation is usually so difficult to carry out.

District Sanitation.—Patrolling was pursued steadily each month, 179 being thus occupied by the Medical Officer, an average of 15 days a month. Practically the whole district was covered, and most of the larger towns were visited at least once. I am very pleased to be able to report that a steady improvement, in some cases very considerable, is apparent throughout the district, in which report the Commissioner concurs. There are, of course, many exceptions among the chiefs and headmen, some of them markedly in the wrong direction, but this is inevitable, and if patrolling continues to be steadily carried out, the number of these will steadily diminish. Both in the station and with the chiefs the District Commissioner has given the very strongest support to sanitation.

Entomology.—This work was carried on steadily, large collections of blood-sucking flies, mosquitoes, and ticks being forwarded to England direct for identification, copies of the reports on them being forwarded to the Principal Medical Officer. A spot map of Glossinæ and Sleeping Sickness was traced and forwarded. Experiments were also carried out with reference to the destruction of mosquito larvæ by fishes and tadpoles, but these varied so much and were so inconclusive that no report was made.

(Signed) JOHN Y. WOOD.

DISPENSARIES.

Mano-Salija.

The number of new cases treated was	...	...	867
Subsequent attendances	...	...	844
		Total	1711

Banana Islands.

Number of new cases treated	...	...	842
Subsequent attendances	...	...	1,426
		Total	2,268

Hastings.

Number of new cases treated	...	...	1,760
Subsequent attendances	...	...	901
		Total	2,661

Port-Lokko.

(This dispensary was opened in the month of May.)

Number of new cases treated	...	...	1,010
Subsequent attendances	...	...	1,224
		Total	2,234

Sumbuyah.

Number of new cases treated	...	...	1,399
Subsequent attendances	...	...	701
		Total	2,100

Regent.

Number of new cases treated	...	...	930
Subsequent attendances	...	...	1,827
		Total	2,757

IV.—SCIENTIFIC.

1.—ENTOMOLOGICAL REPORTS.

2.—A CONTROL EXAMINATION OF THE BLOOD OF NATIVE CHILDREN IN FREETOWN.

BY DR. G. G. BUTLER.

LIST OF BLOOD-SUCKING DIPTERA COLLECTED BY DR. WOOD IN THE
KONINADUGU DISTRICT.

CULICIDÆ.

- Anopheles costalis*, Lw.
A. funestus, Giles.
A. rhodesiensis, Theo.
A. pitchfordi, Theo.
Culex duttoni, Theo.
C. bitæniorrhynchus, Giles.
C. fatigans, Wied.
C. decens, Theo.
C. consimilis, Newst.
C. pruina, Theo.
C. tigripes, Grp.
Culiciomyia nebulosa, Theo.
Stegomyia africana, Theo.
S. fasciata, F.
S. apicoargentea, Theo.
S. sugens, Wied.
S. simpsoni, Theo.
Stegomyia sp. Larvæ.
Toxorhynchites brevipalpis, Theo.
Eretmopodites chrysagaster, Grah.
Eumelanomyia inconspicua, Theo.
Ochlerotatus minutus, Theo.
O. furcifer, Edw.
Tæniorhynchus cristatus, Theo.
Mansonioides uniformis, Theo.
Uranotænia nigripes, Theo.

TABANIDÆ.

- Tabanus besti*, Surc.
T. ruficrus, P. de B.
T. tæniola, P. de B.
Tabanus sp.
Hæmatopota pallidipennis, Aust.
H. hastata, Aust.
H. grahami, Aust.
Chrysops longicornis, Macq.
Hippocentrum murphi, Aust.
Tabanus irroratus, Surc.
T. marmorosus, Surc.
Hæmatopota laccessens, Aust.
Hippocentrum trimaculatum, Newst.

MUSCIDÆ.

Glossina fusca, Walk.*G. longipalpis*, Wied.*G. palpalis*, R. D.

These were identified by the Imperial Bureau of Entomology.

LIST OF TICKS COLLECTED BY DR. WOOD IN THE KOINADUGU DISTRICT.

Rhipicephalus sanguineus.*R. lunulatus*.*R. falcatus*.*Hæmaphysalis leachi*.*Boophilus australis*.*Dermacentor circumguttatus*.*Amblyomma tholloni*.*A. variegatum*.*A. splendidum*.

These were identified by Professors Nuttall and Warburton.

List of Blood-sucking Arthropods collected by Dr. J. M. Dalziel at Sierra Leone :—

SIPHONAPTERA.

Identified by the Hon. N. Charles Rothschild.

PULICIDÆ.

Xenopsylla cheopis.*X. brasiliensis*.*Ctenocephalus canis*.

ANOPLURA.

Identified by Mr. Bruce F. Cummings.

HÆMATOPINIDÆ.

Polyplax spinulosus.

ACARINA.

Identified by Professor G. H. F. Nuttall, F.R.S.

IXODIDÆ.

Rhipicephalus simus.*R. sanguineus*.*Amblyomma sp.*

GAMASIDÆ.

Identified by Mr. S. Hirst.

Laelaps sp.

LIST OF BLOOD-SUCKING DIPTERA COLLECTED AT TESANI
BY DR. W. F. CAMPBELL.

TABANIDÆ.

Hæmatopota pallidipennis, Aust.*Tabanus besti*, Surc.; var. *arbucklei*, Aust.*T. postacutus*, Aust.

MUSCIDÆ.

Glossina palpalis, R. D.

Mosquitoes bred from larvæ from wells in Freetown by Dr. W. Allan.

CULICIDÆ.

Anopheles costalis, Lw.
Culex decens, Theo.
C. insignis, Carter.
C. tigripes, Grp.

TO THE PRINCIPAL MEDICAL OFFICER.

FROM DR. BUTLER.

SIR,

I have the honour to forward to you the following results that were obtained during a "control" examination of the bloods of school children.

I regret that there has been a delay in forwarding these results. The examination of the slides could not be completed before I proceeded on leave, so that the majority of the slides were only examined when I obtained the loan of a microscope during my leave. The delay since my return from leave has been due to the fact that I have been unable to obtain my papers owing to the impossibility of obtaining quarters where I could unpack my boxes.

I have the honour to be, Sir,

Your obedient servant,

(Signed) G. G. BUTLER.

FREETOWN PRISON,

March 30th, 1914.

A CONTROL EXAMINATION ON THE BLOOD OF NATIVE CHILDREN.

The Source of the Material examined.—Fifty children from a Mohammedan School and fifty children from a Christian School were examined on September 18th and 19th respectively of last year. This date corresponds to the end of the rainy season. The children were examined between 10 a.m. and 12 noon at the above schools; they appeared to be healthy children, and presumably were feeling well enough to be able to do their lessons. The children came to school from all quarters of Freetown.

The Nationalities of the children attending the Mohammedan School were very varied, but they were chiefly described as "Yorubas," while those attending the Christian School were of the "Creole" class.

Sex.—Both sexes were included in the examination, but I have made no attempt to divide the results into sex groups.

Age.—Children between the ages of three and ten years respectively were examined. The numbers at each age that were examined will be shown in tabular form with the results of the blood examination.

Temperatures.—The temperature in the mouth was alone recorded. Fifty-five readings only were obtained on account of breakages, it being difficult to make the children understand how to hold the thermometer in their mouth.

The maximum and minimum readings and the averages as taken with a half-minute thermometer are shown later.

The Films.—Leishman's method of staining was employed on all the slides.

Method of Examination of the Blood Films.—In order to obtain comparable results a set time to be devoted to each slide was decided upon as follows :—Each slide was to be examined for Malaria rings under $\frac{1}{12}$ th oil immersion for half an hour before it could be declared negative, and also, if crescents were not detected during this period, a further examination for a quarter of an hour under $\frac{1}{6}$ th objective was undertaken for these bodies before their presence could be negatived.

Splenic Index.—In addition to the examination of the blood, an examination for enlargement of the spleen was made on the same children, but it must be admitted that the examination was not intended as part of the investigation, and was therefore rather cursory. The results are given for what they are worth. The children were examined in the upright position and palpation performed during deep respiration. There was no attempt to confirm the nature of any mass felt, by means of percussion or otherwise, but the likelihood of renal or other tumour is remote. Classification of the spleens into groups varying by a finger's breadth was not attempted, but I have separated a group that could be described as "only just palpable."

Results.—Forty-nine children among the hundred examined showed the presence of malaria parasites in their blood, 49 per cent.

The nature of the parasites found was as follows :—

Subtertian malaria	...	...	...	...	...	41
Quartan malaria	...	...	...	...	...	8

These parasites were found among the Christian and Mohammedan children almost equally.

It is to be noted here that the above figures apply solely to the "active" form of malaria parasites, and not to crescents. Crescents were only found in a single instance.

The age groups into which the children fall with the parasites incidence is now given :—

Age.	No. exd.	Negative.	Positive.	
			Subtertian.	Quartan.
3	1	1	—	—
4	14	7	5	2
5	25	9	13	3
6	18	11	6	1
7	19	13	6	—
8	15	5	8	2
9	6	4	2	—
10	2	1	1	—
	100	51	41	8

I do not think there are sufficient numbers to warrant any deduction, though it would be expected that there ought to be a lower parasite rate the older the children.

I have not attempted to make a parasite count, but I have been struck with the ease and the short examination that was necessary to find the parasites. It was the rule, in the positive cases, to find several rings within five or ten minutes, and in numbers that gave the impression that the children ought to be distinctly indisposed and not be able to attend school.

Temperatures.—Taking the entire group, the range of temperature varied between 97°F. and 101°F., with an average of 99·16°F.

The temperature of the non-malaria bearing cases ranged between 97°F. and 100·2°F., with an average of 99·1°F.

The temperature of the malaria bearing cases varied between 98°F. and 101°F., with an average of 99·219°F.

There is practically no difference between these two groups of readings, but this may possibly be accounted for by the fact that the rise in temperature of malaria fever cases is usually later on in the day than when these temperatures were taken.

Splenic enlargement.—Spleens were found to be enlarged from the size “only just palpable” upwards in no less than 43 cases out of 100, and the “only just palpable” group accounted for 15 only. Of the two groups of children, the fifty Mohammedan children show splenic enlargement in 17 only, compared with 26 among the 50 Christian children. Possibly this is evidence of a greater immunity among real native children as compared with the “creole” children, who are the descendants of a recently imported race. By comparing the group of children showing malaria parasites in their peripheral circulation with those that do not, we find that 27 out of the 49 malaria bearing cases show splenic enlargement, and in only 5 of the 27 was the spleen described as “only just palpable,” while amongst the 51 non-malaria bearing cases only 16 showing splenic enlargement, of which no less than 10 were classed as “only just palpable.”

CONCLUSIONS.

1. Towards the end of the rainy season the apparently healthy children of Freetown, between the ages of 3 and 10 years inclusive, show the presence of “active” malaria parasites in 50 out of the hundred examined.

2. The percentage of infected children is alike for the children attending the Mohammedan and Christian schools.

3. Of the children showing the presence of malaria parasites approximately 83 per cent. harbour the subtertian form and 16 per cent. the quartan form.

4. Between the hours of 10 a.m. and 12 noon the temperature of children harbouring malaria parasites does not appear to be appreciably raised above that of children not harbouring the parasites.

5. The splenic index was found to be 43 per cent. It is shown in the results that the children harbouring parasites in their peripheral blood have a considerably higher splenic index than those not harbouring parasites.

(Signed) G. G. BUTLER.

DISEASES.	Remaining in Hospital at end of 1912.											Yearly Total.													
												Admissions.													
	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batmanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batmanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.	
INFECTIVE DISEASES—																									
Beriberi	—	10	—	—	—	—	—	—	—	—	—	10	2	17	—	—	—	—	—	—	—	—	—	3	22
Cerebro-Spinal Fever...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chicken-pox	—	—	—	—	—	—	—	—	1	—	—	1	—	39	1	4	—	—	1	—	2	—	—	—	47
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dengue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery	—	—	—	—	—	—	—	1	—	—	—	1	21	10	1	2	1	1	2	31	—	7	—	—	76
Endocarditis (Infective)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
Erysipelas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gonorrhœa	—	—	—	—	—	—	—	—	—	—	—	—	8	4	—	—	—	—	2	39	1	4	2	—	60
Influenza	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Kala-Azar	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leprosy (a) Nodular ...	—	—	—	—	—	—	—	—	—	4	—	4	1	5	—	—	—	—	—	—	—	—	11	—	17
(b) Anæsthetic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria (a) Tertian ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	7	—	12	—	—	3	—	—	23
(b) Quartan	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	3
(c) Æstivo—Autumnal ...	1	—	—	—	—	—	—	—	—	—	—	1	90	9	—	1	—	—	—	—	6	—	—	—	106
(d) Chronic Malaria...	—	—	—	—	—	—	—	1	—	—	—	1	13	—	—	—	—	—	69	—	—	—	—	—	82
(e) Blackwater Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	2
Measles	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	—	—	1	2	—	—	—	6
Undulant Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	2	—	—	—	—	—	—	—	—	—	—	2	44	2	—	1	—	—	—	1	3	1	—	—	52
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Rheumatic Fever	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Septicæmia	—	—	—	—	—	—	—	—	—	—	—	—	16	—	—	—	—	—	—	—	—	—	3	—	19
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
Syphilis (a) Primary ...	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
(b) Secondary	—	—	—	—	—	—	—	—	—	—	—	—	10	—	2	—	1	—	—	—	—	—	—	—	13
(c) Tertiary	1	—	—	—	—	—	—	—	—	22	—	23	1	—	1	2	—	—	—	3	—	—	25	—	32
Tetanus	—	—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	6
Trypanosomiasis (Sleeping Sickness)	—	—	—	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	—	—	—	—	10
Tuberculosis	3	1	—	—	—	—	—	—	—	—	—	4	31	2	—	—	—	—	—	—	1	—	3	—	37
Whooping Cough	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	4
Yaws	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Diseases...	—	—	—	—	—	—	—	—	—	—	—	—	12	1	—	—	—	—	—	—	—	—	—	—	13
INTOXICATIONS—																									
Alcoholism	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Morphinism	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Others	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GENERAL DISEASES—																									
Anæmia	—	—	—	—	—	—	—	—	—	16	—	16	10	—	1	—	—	—	—	1	—	—	1	—	13
Anæmia (Pernicious)...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
Diabetes	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	2
Exophthalmic Goitre ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gout	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leucocythæmia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hodgkin's Disease	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
Myxœdema	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Purpura	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rickets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scurvy	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Rheumatism	4	1	—	1	—	—	—	—	—	13	—	19	73	5	—	1	2	—	5	—	1	—	11	—	98
Other Diseases...	—	—	—	—	—	—	—	—	—	4	—	4	23	2	—	—	—	—	—	1	—	—	38	—	64
LOCAL DISEASES.																									
DISEASES OF THE NERVOUS SYSTEM—																									
Sub-section 1.																									
Neuritis	—	—	—	—	—	—	—	—	—	—	—	—	7	2	—	—	—	—	—	2	—	—	—	—	11
Meningitis	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Myelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—									

OF IN-PATIENTS FOR YEAR 1913.

43

Yearly Total.											Total Cases Treated.											Remaining in Hospital at end of 1913.													
Deaths.																																			
Freetown Hospital.	Freetown Gaol.	Bonthe.	Batkanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batkanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batkanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.
1	5										6	2	27										3	32										1	1
	1										1		39	1	4			1		3				48											
4	2										6	21	10	1	2	1	1	2	32		7		77												
												2											2												
												8	4					2	39	1	4	2	60							1			1		
												1											1												
										2	2	1	5			7	12					15	21									2	2		
														1							3		23												
												3											3												
1											1	91	9	1					6				107	3									3		
												13							70				83												
		1									1	1		1	1				1	2			2	1									1		
												1		1	1							6													
17											17	46	2	1					1	3	1		54												
																			1				1												
												1											1												
11										3	14	16			1							3	19												
												2											1												
												10		2		1							13												
										17	17	2		1	2				3			47	55			1						23	24		
3											3	6											6												
2											2	10											10	4									4		
10	1								1		12	34	3						1			3	41	3								1	4		
1											1	4											4												
												12	1										13												
1											1	1											1												
1											2	10		1					1			17	29									5	5		
												1			1						1		2												
												2											2												
												1											1												
												77	6		2	2		5		1		24	117	3								12	15		
2	1									21	24	23	2						1			42	68								8	8			

[illegible]

[illegible]

DISEASES.	Remaining in Hospital at end of 1912.											Yearly Total.												
												Admissions.												
	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batmanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.	Freetown Hospital.	Freetown Gaol.	Bonthe.	Batmanu.	Makump.	Kaballa.	Tesani.	Daru.	Bo.	Moyamba.	Kissy.	Total.
Brought forward...	28	15	—	1	—	1	—	3	1	1	80	130	1066	181	20	21	17	18	53	225	53	74	127	1855
DISEASES OF ORGANS OF LOCOMOTION—																								
Osteitis...	—	—	—	—	—	—	—	—	—	—	—	—	8	2	—	—	—	—	—	2	—	—	1	13
Arthritis	—	—	—	—	—	—	—	—	—	—	—	—	3	8	3	—	2	—	—	—	—	6	1	23
Spondylitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bursitis...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	2
Other Diseases...	1	—	—	—	—	—	—	—	—	—	—	1	23	2	—	—	—	—	5	15	4	1	—	50
DISEASES OF CONNECTIVE TISSUE—																								
Cellulitis	—	—	—	—	—	—	—	—	2	—	—	2	14	—	1	—	—	—	—	2	7	—	—	24
Abscess	4	—	—	—	—	—	—	—	—	1	—	5	57	3	4	—	—	1	3	7	4	2	3	84
Elephantiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DISEASES OF THE SKIN—																								
Urticaria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Eczema	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	1	—	3
Boil	—	—	—	—	—	—	—	—	—	—	—	—	3	1	—	—	—	—	2	3	1	1	—	11
Carbuncle	2	—	—	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	2
Herpes	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	2
Psoriasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Oriental Sore	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tinea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scabies	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Acne	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Prickly Heat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer	5	—	2	—	—	—	—	1	1	—	12	21	90	3	7	2	1	—	1	11	8	3	22	148
INJURIES—																								
General...	—	—	—	—	—	—	—	—	—	—	—	—	4	9	—	—	—	—	—	1	—	—	—	14
Local	8	—	—	1	—	—	—	—	—	—	—	9	153	—	17	5	21	2	2	24	12	19	5	260
SURGICAL OPERATIONS																								
TUMOURS																								
Malformations	—	—	—	—	—	1	—	—	—	—	—	1	28	—	—	—	1	—	—	4	—	3	—	36
Poisons	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
PARASITES—																								
Animal.																								
Protozoa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trematoda (Flukes)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cestoda.																								
Tenia Solium	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	2
Tenia Saginata	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	2
Nematoda.																								
Ascaris	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	1	—	—	—	3
Tricocephalus Dispar	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trichina	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dracunculus	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	2	—	—	5
Filariasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strongylus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ankylostomiasis	—	—	—	—	—	—	—	—	—	—	—	—	3	2	—	—	—	—	—	—	—	2	—	7
Oxyuris	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Insecta.																								
Myiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	2	—	—	5
TOTAL	48	15	2	2	—	2	—	4	4	2	92	171	1465	213	52	28	42	21	66	301	94	113	159	2554

[illegible]

RETURN OF OUT-PATIENTS—SHOWING DETAILS OF CASES TREATED IN EACH MEDICAL DISTRICT, 1913.

DISEASES.	Stations in charge of Medical Officers.										Stations in charge of Dispensers.										Total.					
	Freetown.	Cline Town.	Freetown Gaol.	Kissy.	Moyamba.	Bo.	Daru.	Tesani.	Kaballa.	Batkump.	Bontho.	Dandajuma.	Pujehun.	Waterloo.	Hastings.	Regent.	Goderich.	Kent.	York.	Banana Islands.		Kaure Lahun.	Kenema.	Sumbuya.	Port Lokko.	Mano-Salija.
INFECTIVE DISEASES---																										
Beriberi	1	—	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-Spinal Fever	—	4	33	—	1	2	—	—	3	2	1	—	—	11	7	—	—	—	—	—	—	—	—	—	—	—
Chicken-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dengue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery... ..	27	3	9	10	34	25	14	5	4	3	13	12	19	17	9	6	3	3	9	9	12	25	41	22	14	6
Endocarditis (Infective)...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gonorrhoea	95	7	56	7	55	36	111	53	19	20	23	68	59	40	18	2	17	6	17	6	87	176	10	32	66	1213
Influenza	23	—	—	—	—	2	—	—	—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	1	—	31
Leprosy (a) Nodular	5	—	5	—	1	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	15
(b) Anaesthetic...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11
(c) Tertian	—	—	53	124	113	71	—	41	—	—	21	136	49	75	61	—	1	3	3	—	1	—	—	—	—	15
(d) Quartan	—	—	—	—	—	1	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	11
(e) Estivo-Autumnal	888	7	43	—	—	24	4	—	45	20	38	—	11	2	—	—	65	38	54	54	—	—	—	—	—	10
(f) Chronic Malaria	3	—	—	—	—	—	157	—	2	—	—	—	—	51	—	—	—	—	—	—	76	1	—	—	—	290
(g) Blackwater Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles	4	—	—	—	5	3	2	2	1	1	1	—	—	19	2	2	—	—	—	8	—	12	6	—	—	68
Undulant Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	24	1	1	2	8	3	1	—	4	1	1	—	2	2	—	—	3	1	—	—	4	—	2	2	2	66
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rheumatic Fever...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Septicæmia	7	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	4	—	—	—	—	—	4
Small-pox...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8
Syphilis (a) Primary	—	—	—	—	—	—	—	—	—	2	—	8	1	—	—	—	—	—	—	—	—	—	—	—	—	—
(b) Secondary	28	—	—	—	5	16	7	—	3	—	13	—	1	15	—	—	—	2	—	—	5	1	—	—	—	20
(c) Tertiary	41	4	1	21	5	—	4	—	1	51	3	—	—	8	19	3	1	8	—	—	2	11	—	—	—	1
Tetanus	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6
Trypanosomiasis (Sleeping Sickness)	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
Tuberculosis	44	1	1	2	3	2	1	—	3	1	2	1	1	1	—	1	—	3	—	—	—	—	—	—	—	71
Whooping Cough	134	—	—	23	6	2	2	—	1	1	4	2	—	18	7	22	61	3	3	1	3	4	1	1	—	292
Yaws	1	—	—	—	1	2	4	20	4	3	3	6	—	8	1	—	—	10	—	—	—	6	11	3	3	145
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Other Diseases	—	7	—	—	1	—	15	—	2	3	1	—	—	2	—	—	1	—	—	—	—	3	15	—	3	85
INTOXICATIONS---																										
Alcoholism	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Morphinism	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Others	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RETURN OF OUT-PATIENTS—SHOWING DETAILS OF CASES TREATED IN EACH MEDICAL DISTRICT, 1913—continued.

DISEASES.	Stations in charge of Medical Officers.										Stations in charge of Dispensers.										Total.						
	Freetown.	Cline Town.	Preetown Gaol.	Kissy.	Moyamba.	Bo.	Daru.	Tesani.	Kaballa.	Batambu.	Makump.	Bontho.	Bandajuma.	Pujehun.	Waterloo.	Hastings.	Regent.	Goderich.	Kent.	York.		Banana Islands.	Kaure Lahun.	Kenema.	Sunbuya.	Port Lokko.	Mano-Saltija.
DISEASES OF THE EYE—continued.																											
Iritis ...	—	—	2	—	2	1	1	—	2	—	1	—	—	3	1	—	—	—	2	—	—	—	—	—	—	—	—
Optic Neuritis ...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Cataract ...	1	1	6	1	1	—	2	—	1	—	2	—	—	2	2	—	1	—	—	—	—	—	1	6	—	—	
Other Diseases ...	3	5	2	—	4	6	13	2	4	1	9	—	—	1	4	—	1	—	3	—	2	—	7	—	—	—	
DISEASES OF THE EAR—																											
Inflammation ...	57	2	30	—	10	10	2	3	1	11	3	7	7	13	15	21	5	1	1	17	10	2	11	15	4	2	260
Other Diseases ...	26	—	—	27	13	3	21	4	6	10	15	3	—	—	8	5	—	—	12	4	—	—	6	—	—	—	163
DISEASES OF THE NOSE ...																											
...	97	13	25	6	10	4	12	4	3	2	143	19	11	1	71	47	6	4	4	26	—	—	11	1	—	5	525
DISEASES OF THE CIRCULATORY SYSTEM—																											
Pericarditis ...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	5
Endocarditis ...	1	—	—	10	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13
Valvular—Mitral ...	54	6	4	18	2	9	—	2	1	2	2	5	2	1	6	3	—	4	3	1	—	—	8	5	4	1	143
Aortic ...	—	—	2	—	1	3	—	—	8	—	—	2	—	—	1	1	—	—	—	—	—	—	2	—	—	—	23
Triuspid ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Pulmonary ...	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Arterial Sclerosis ...	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7
Aneurism ...	9	1	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13
Other Diseases ...	18	7	5	11	1	2	2	1	—	1	1	1	—	—	5	8	4	1	14	6	—	—	—	—	—	1	89
DISEASES OF THE RESPIRATORY SYSTEM—																											
Laryngitis ...	17	—	—	—	7	5	4	—	—	117	—	1	1	—	1	1	—	1	1	—	—	—	—	—	—	1	157
Bronchitis...	1093	29	359	213	164	229	147	122	94	—	166	142	126	64	214	194	178	169	68	122	118	83	259	92	99	62	4586
Broncho-Pneumonia ...	13	—	—	2	—	1	—	—	—	—	8	—	3	—	1	—	—	—	—	—	—	—	1	—	4	—	33
Abscess of Lung ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gangrene of Lung ...	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Emphysema ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Pleurisy ...	42	—	—	4	21	6	11	4	4	6	2	3	4	1	—	4	4	—	6	—	—	—	3	—	5	3	133
Empyema...	9	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10
Other Diseases ...	12	103	14	16	10	2	4	5	4	3	1	3	1	1	9	8	2	3	12	12	—	1	11	15	—	5	257
DISEASES OF THE DIGESTIVE SYSTEM—																											
Stomatitis...	51	6	10	3	5	6	3	3	7	—	6	5	2	—	20	34	7	9	—	2	2	—	2	1	1	2	187
Caries of Teeth ...	323	7	33	38	84	47	43	17	17	13	28	45	23	16	37	55	24	28	10	25	14	6	45	21	25	19	1043
Glossitis ...	1	2	4	2	—	—	—	—	—	1	—	—	—	—	1	—	—	—	9	10	—	—	7	—	—	2	39
Sore Throat ...	61	7	3	9	28	19	2	4	—	1	2	8	2	2	7	15	4	1	—	7	2	2	11	3	—	3	203
Inflammation of Tonsils...	67	2	5	6	9	1	7	—	3	2	7	6	—	8	11	2	3	4	5	10	8	1	4	8	2	—	181
Gastritis ...	52	1	1	17	6	3	15	1	2	2	—	16	2	—	30	15	6	2	4	4	—	—	6	5	—	3	193
Ulceration of Stomach ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

DISEASES OF THE DIGESTIVE SYSTEM—

continued.

Disease	No.
Hæmatemesis ...	1
Dilatation of Stomach	—
Stricture of Stomach	83
Dyspepsia... ..	68
Enteritis	268
Appendicitis	3
Colitis	—
Ulceration of Intestines...	—
Sprue	30
Hernia	62
Diarrhoea	189
Constipation	550
Colic	81
Hæmorrhoids	12
Pancreatitis	—
Hepatitis (Acute)	22
Abscess	5
Cirrhosis	14
Jaundice	4
Peritonitis	1
Ascites	3
Other Diseases	96
Total	276

DISEASES OF THE LYMPHATIC SYSTEM—

[illegible]

DISEASES OF THE URINARY SYSTEM—

[illegible]

DISEASES OF THE GENERATIVE SYSTEM—

Male Organs.

[illegible]

RETURN OF OUT-PATIENTS—SHOWING DETAILS OF CASES TREATED IN EACH MEDICAL DISTRICT, 1913—continued.

DISEASES.	Stations in charge of Medical Officers.										Stations in charge of Dispensers.										Total.							
	Freetown.	Cline Town.	Freetown Gaol.	Kissy.	Moyamba.	Bo.	Daru.	Tesani.	Kaballa.	Batkamu.	Makump.	Bonthé.	Bandajuma.	Pujehun.	Waterloo.	Hastings.	Regent.	Goderich.	Kent.	York.		Banana Islands.	Kaare Lahun.	Kenema.	Sunbuya.	Port Lokko.	Mano-Salija.	
DISEASES OF THE GENERATIVE SYSTEM—																												
<i>continued.</i>																												
Stricture ...	45	—	7	4	5	2	3	1	—	—	—	1	—	—	2	5	—	—	—	—	2	3	4	7	1	1	—	93
Prostatitis ...	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Soft Chancre ...	5	—	8	—	15	6	5	—	1	4	1	8	3	—	2	—	—	—	—	—	—	2	—	17	5	3	2	101
Condyloma ...	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Inflammation of Scrotum ...	1	—	3	—	—	—	—	—	1	—	—	—	8	—	1	—	—	—	—	—	—	—	—	—	—	—	—	19
Hydrocele ...	18	—	15	4	5	2	4	—	5	3	1	2	1	—	4	—	—	—	2	—	2	—	1	4	—	—	—	71
Orchitis ...	23	—	7	—	4	7	2	10	2	2	11	5	4	7	3	3	—	1	2	—	2	11	12	7	—	—	127	
Epididymitis ...	9	—	1	—	8	2	4	1	—	1	—	—	8	4	—	—	—	—	1	—	—	—	—	—	1	—	45	
Abscess of Testicle ...	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3	
Other Diseases ...	108	1	1	—	—	7	9	—	1	—	—	2	—	—	—	—	—	—	—	—	—	—	6	—	1	—	136	
<i>Female Organs.</i>																												
Ovaritis ...	10	—	—	—	—	2	—	—	—	—	—	1	—	—	1	2	—	—	—	—	—	—	—	11	—	—	—	27
Ovarian Cyst ...	—	—	—	—	—	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Endometritis ...	68	—	—	2	1	1	2	2	—	—	—	—	—	—	7	8	6	—	12	7	—	—	—	—	—	—	—	116
Displacement of Uterus ...	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	4
Vaginitis ...	3	—	—	—	—	—	—	—	—	1	—	—	—	—	5	—	—	—	—	—	—	—	—	—	1	1	—	13
Amenorrhœa ...	40	1	—	8	6	1	2	3	2	1	4	3	1	6	19	12	2	6	—	—	9	3	3	1	13	10	14	170
Dysmenorrhœa ...	21	6	—	5	—	—	6	1	2	2	2	2	1	7	7	6	—	2	3	—	10	4	1	—	23	4	5	120
Menorrhagia ...	14	1	—	7	—	3	2	1	1	—	1	1	—	—	11	2	2	—	3	—	1	—	—	1	2	1	3	57
Leucorrhœa ...	6	—	—	—	—	2	—	—	—	—	—	—	—	—	4	—	—	7	1	—	2	—	—	—	3	5	31	
Abortion ...	10	5	—	3	2	—	2	—	2	—	—	—	—	1	2	1	1	—	—	—	1	—	—	2	—	—	1	34
Delayed Labour ...	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	2
Post-partum Hemorrhage ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	2
Retained Placenta ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Premature Birth ...	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Puerperal Septicæmia ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Mastitis ...	10	1	—	3	—	1	1	—	2	1	—	1	—	6	1	1	1	1	1	—	1	—	1	—	1	—	—	33
Abscess of Breast... ..	2	—	—	—	—	—	1	1	—	—	—	—	—	1	1	1	2	—	—	—	1	—	—	—	1	—	—	12
Other Diseases ...	57	2	—	3	1	2	—	—	—	—	1	—	—	—	23	—	10	—	—	—	—	—	—	—	—	—	—	99
DISEASES OF ORGANS OF LOCOMOTION—																												
Osteitis ...	26	—	5	4	36	14	6	2	2	5	2	157	2	—	—	2	1	—	—	—	—	—	—	1	5	6	—	276
Arthritis ...	54	4	15	10	118	15	14	5	7	3	16	3	17	37	7	2	—	1	3	—	—	—	32	1	—	—	—	372
Spondylitis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bursitis ...	—	—	—	—	—	1	—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	—	—	2	1	—	—	7
Other Diseases ...	75	3	—	—	12	7	31	12	22	67	31	1	—	1	17	70	—	2	2	—	7	—	53	13	26	—	29	482
DISEASES OF CONNECTIVE TISSUE—																												
Cellulitis ...	32	9	—	2	7	21	4	2	2	2	1	5	1	—	6	3	6	1	—	4	1	—	—	—	1	1	—	114
Abscess ...	265	3	12	8	26	15	3	25	10	18	24	29	27	10	23	17	10	13	7	7	2	—	2	13	10	6	6	591

VITAL STATISTICS--FREETOWN, 1913

Table A.

TABLE SHOWING THE INFANTILE MORTALITY.

		24 Hours and under.		1 Day to 1 Week.		1 to 2 Weeks.		2 to 3 Weeks.		3 Weeks to 1 Month.		1 to 2 Months.		2 to 3 Months.		3 to 4 Months.		4 to 5 Months.		5 to 6 Months.		6 to 7 Months.		7 to 8 Months.		8 to 9 Months.		9 to 10 Months.		10 to 11 Months.		11 to 12 Months.		Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
January	5	1	2	2	—	—	1	1	—	—	2	2	—	—	1	1	—	—	1	1	—	—	—	—	—	—	—	—	—	18		
February	—	2	2	—	4	—	—	—	1	1	—	1	—	1	—	1	1	—	—	—	—	—	1	—	—	—	—	—	1	19		
March	2	2	—	—	—	1	—	2	—	—	1	—	—	1	1	1	2	—	1	1	—	—	2	—	—	—	—	2	—	18		
April	1	2	1	2	—	—	—	1	—	—	1	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	1	11			
May	—	2	4	—	—	1	—	1	—	1	—	1	—	2	—	—	—	1	3	1	—	—	—	—	—	—	—	1	19			
June	—	4	2	—	1	—	1	—	1	—	2	—	1	—	—	—	1	—	—	—	1	—	—	—	—	—	—	1	16			
July	2	1	—	1	2	1	—	—	2	—	1	—	1	—	2	1	—	4	—	2	1	1	2	2	—	—	—	1	1	30		
August	2	—	—	—	—	—	1	—	3	—	1	1	2	—	—	1	2	—	2	2	—	2	—	1	2	—	—	—	—	23		
September	3	2	2	1	2	—	—	—	2	—	1	3	—	—	—	—	2	1	—	1	—	—	—	—	1	—	—	—	—	22		
October	3	4	3	3	1	—	—	—	1	—	—	—	—	—	—	—	—	1	—	1	—	—	1	—	—	—	—	—	—	18		
November	2	1	—	2	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	10			
December	3	1	3	3	1	1	—	—	1	—	1	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	17		
Total		23	22	19	14	12	4	3	4	1	5	8	5	6	9	9	1	3	4	7	9	8	3	4	6	4	4	2	3	1	4	6	221

Table B.

TABLE SHOWING THE MORTALITY OVER TWELVE MONTHS.

		1 to 5 Years.		5 to 10 Years.		10 to 15 Years.		15 to 20 Years.		20 to 25 Years.		25 to 35 Years.		35 to 45 Years.		45 to 55 Years.		55 to 65 Years.		65 to 75 Years.		Over 75 Years.		Total.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	...	2	2	—	—	—	—	1	—	—	—	2	2	2	1	1	1	2	1	—	—	3	21	
February	...	—	1	—	1	—	1	1	1	4	2	9	4	2	2	8	1	3	1	1	3	2	47	
March	...	1	3	1	1	1	—	1	2	2	—	5	1	3	7	5	3	2	4	—	1	3	46	
April	...	1	3	1	—	—	—	—	1	—	—	7	—	2	2	3	—	3	1	1	2	2	30	
May...	...	2	1	1	1	—	1	—	—	2	1	3	3	3	2	4	5	3	1	2	2	1	40	
June...	...	5	2	—	1	1	1	3	1	4	1	2	2	6	4	1	1	3	3	1	3	2	51	
July...	...	7	5	1	1	—	—	—	—	1	3	9	9	2	2	—	1	4	5	2	4	—	58	
August	...	7	3	2	—	—	2	—	—	1	1	6	3	6	5	3	2	4	3	1	—	4	55	
September	...	3	3	3	2	2	—	1	1	2	3	3	6	3	2	2	2	2	3	1	1	3	48	
October	...	5	4	1	—	—	—	1	—	2	1	8	4	9	5	5	2	2	4	—	2	5	62	
November	...	6	3	1	—	—	1	1	—	1	3	5	4	6	3	3	2	4	2	2	2	2	51	
December	...	2	1	—	1	1	2	—	1	1	2	9	1	5	4	1	3	4	2	2	2	3	48	
TOTAL	...	41	31	11	8	5	8	9	7	20	17	68	39	49	39	36	23	35	32	16	17	30	557	

Table C.

TABLE SHOWING THE MORTALITY DUE TO DIFFERENT DISEASES UP TO THE AGE OF FIVE YEARS.

DISEASES.	24 Hours and under.		1 Day to 1 Week.		1 to 2 Weeks.		2 to 3 Weeks.		3 Weeks to 1 Month.		1 to 2 Months.		2 to 3 Months.		3 to 4 Months.		4 to 5 Months.		5 to 6 Months.		6 to 7 Months.		7 to 8 Months.		8 to 9 Months.		9 to 10 Months.		10 to 11 Months.		11 to 12 Months.		1 to 5 Years.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Dysentery ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Fever ...	—	—	—	—	1	1	—	2	1	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48
Septicæmia ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	
Congenital Syphilis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
Tetanus ...	—	2	5	5	8	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22	
Whooping Cough ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25	
Marasmus ...	1	—	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15	
Dropsy ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	
Nervous System ...	—	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55	
Circulatory " ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	
Respiratory " ...	—	—	—	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34
Digestive " ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	
Premature Birth ...	3	2	12	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22	
Atalectasis ...	19	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37	
Skin Diseases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	
Injuries—Local...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
TOTAL ...	23	22	19	14	12	4	3	4	1	5	8	5	6	9	9	1	3	4	7	9	8	8	3	4	6	4	2	3	1	4	6	41	31	293	

Table D.

[225957]

TABLE SHOWING THE MORTALITY DUE TO DIFFERENT DISEASES OVER FIVE YEARS.

DISEASES.		5 to 10 Years.		10 to 15 Years.		15 to 20 Years.		20 to 25 Years.		25 to 35 Years.		35 to 45 Years.		45 to 55 Years.		55 to 65 Years.		65 to 75 Years.		Over 75 Years.		Total.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Infective Diseases—																						
Dysentery ...	...	1	2	1	3	1	—	1	1	5	—	1	—	—	—	—	2	—	—	—	—	26
Gonorrhœa ...	...	—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—	—	—	1
Malarial Fever ...	...	2	—	1	2	1	1	1	1	3	6	1	1	5	2	3	2	—	—	—	—	37
Blackwater Fever ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Pneumonia ...	...	—	1	—	—	1	1	3	—	4	2	1	4	—	—	4	—	1	—	—	—	42
Trypanosomiasis ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Tetanus ...	...	1	1	2	—	—	1	3	3	—	3	—	—	1	1	—	—	—	—	—	—	13
Tuberculosis ...	...	—	—	—	—	—	1	—	4	7	8	—	—	—	—	—	—	—	—	—	—	45
General Diseases ...	...	—	—	—	—	1	—	2	1	4	4	1	1	4	1	—	4	1	—	—	—	83
Diseases of Nervous System	..	1	1	—	—	1	1	1	—	3	7	2	2	2	3	7	8	1	6	29	—	40
" Circulatory System	...	1	—	—	1	1	—	2	1	6	5	6	4	4	5	3	4	2	2	1	—	49
" Respiratory	...	3	1	1	2	1	1	1	2	6	4	2	4	4	4	4	3	2	2	2	—	46
" Digestive	...	1	1	1	—	1	1	2	1	6	4	2	4	5	3	3	4	3	3	1	—	45
" Urinary	...	1	1	—	—	—	—	1	2	1	2	—	—	2	3	4	1	1	1	—	—	25
" Generative	...	—	—	—	—	1	—	—	—	—	1	2	—	2	—	2	—	—	—	—	—	8
" " Male	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
" " Female...	...	—	—	—	—	—	—	—	4	1	—	1	—	—	—	—	—	—	—	—	—	1
" Connective Tissues	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
" Skin ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Injuries—General	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
" Local	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
" Tumours ...	...	—	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	4
Total	...	11	8	5	8	9	7	20	17	68	39	49	39	36	23	35	32	16	16	30	485	

Table E.
TABLE SHOWING THE MORTALITY DUE TO DIFFERENT DISEASES AT ALL AGES.

DISEASES.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Infective Diseases—																									
Dysentery ...	—	2	1	1	—	1	1	1	—	1	3	—	2	2	2	—	2	2	1	2	4	—	—	1	31
Gonorrhoea ...	1	2	2	8	2	3	4	1	4	5	1	—	7	—	6	—	2	—	4	6	2	4	—	—	1
Malarial Fever ...	—	—	1	—	—	—	—	—	—	—	3	—	2	9	—	—	—	—	1	—	3	—	1	—	85
Blackwater Fever	—	—	2	1	2	1	1	—	1	—	—	—	—	5	—	—	3	—	4	—	2	2	—	—	2
Pneumonia ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	3	1	—	42
Trypanosomiasis	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Syphilis, Inherited	—	—	2	—	—	2	2	1	2	2	2	1	2	—	2	—	1	—	3	4	2	—	2	1	1
Tetanus ...	4	1	3	—	3	—	1	—	—	—	3	2	1	—	5	3	3	2	4	3	—	2	2	3	35
Tuberculosis ...	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	45
Septicæmia ...	—	—	—	—	—	1	—	—	1	1	—	2	1	—	1	2	4	7	—	—	1	—	—	—	2
Whooping Cough	—	—	—	—	—	—	—	—	1	2	4	2	5	2	—	6	3	6	4	6	5	3	4	2	98
General Diseases ...	4	6	2	8	4	6	2	2	4	2	8	5	5	5	4	6	3	6	5	3	3	1	5	4	2
Diseases of the Nervous System	5	5	7	3	5	6	2	3	2	3	2	3	2	2	3	7	2	2	2	2	1	6	5	1	95
" " Circulatory "	—	—	1	3	3	2	3	1	2	1	2	3	2	2	2	2	1	2	6	2	3	3	5	1	51
" " Respiratory "	1	1	5	2	3	1	1	2	6	4	2	—	7	12	7	6	4	2	2	4	1	3	2	1	80
" " Digestive "	2	1	2	4	4	4	3	2	6	4	7	—	4	1	2	—	1	2	4	4	2	2	2	—	65
" " Urinary "	1	—	1	—	—	3	1	1	1	1	2	1	2	1	—	—	1	2	3	1	1	2	—	4	27
" " Generative "	—	—	3	—	—	—	1	—	1	—	2	—	—	—	—	—	1	1	—	—	—	1	—	—	8
" " " Male	—	—	—	—	—	—	—	—	1	1	—	2	—	—	—	2	—	—	—	—	—	—	—	1	9
" " " Female	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
" " Connective Tissues	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	2
" " Skin ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Injuries—General ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
" Local	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Tumours ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Premature Birth ...	3	—	4	—	2	2	—	1	2	1	—	3	1	—	7	—	1	—	4	—	2	—	9	3	59
TOTAL	21	18	36	30	31	33	22	19	33	26	41	26	42	46	44	34	35	35	45	35	37	24	39	26	778

Table F.
TABLE SHOWING THE DISTRIBUTION OF DEATHS ACCORDING TO MONTHS AND SEXES.

Month.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Male	21	36	31	22	33	41	42	44	35	45	37	39	426
Female	18	30	33	19	26	26	46	34	35	35	24	26	352
Total	39	66	64	41	59	67	88	78	70	80	61	65	778

ANNUAL SANITARY REPORT

FOR THE YEAR ENDING 31ST DECEMBER, 1913,

BY THE

SENIOR SANITARY OFFICER.

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I.—ADMINISTRATION.

(1) The decision announced in the Report for the year 1912 that certain sanitary matters should pass from the control of the Freetown Municipality and the Sherbro Municipal Board to that of the Government, took effect at the commencement of the year 1913. It is not considered necessary to add anything here to the short explanation of the change given in the Report for 1912.

(2) Difficulties arose almost at once because the Sanitary Engineer was attached to the Sanitary Department, and consequently it cannot be considered that the original proposal had a fair chance of proving its value. As a result, somewhat less work of the description which is expected to show the presence of engineering expert advice has been done during the past year by the Sanitary Department, or as a result of its instigation, than probably would have been otherwise the case. Consolation for this drawback may be found, however, in the fact that it was possible for the Sanitary Engineer (Mr. H. Simms) while still attached to the Sanitary Department to undertake without delay, and before going on leave to complete, the draft of a measure dealing with Building Regulation and Improvement in Freetown. With practically no basis in local legal enactment on which to build, the preparation of a draft dealing comprehensively and in detail with such a subject involved a very great expenditure of time, labour and care by the draughtsman. The draft will be subjected to close scrutiny and criticism by those competent to judge from the several points of view of the interests it affects, and to revision by the Sanitary Engineer, before the final draft is presented.

Acting under instructions, the Director of Public Works and the Senior Sanitary Officer conferred with the object of agreeing to some arrangement by which the difficulties referred to above might be obviated, and it is hoped that the compromise reached may result in the harmonious co-operation which is essential for satisfactory progress. The arrangement may be briefly stated to be that the Sanitary Engineer has relation to the Director of Public Works similar to the relation the Senior Sanitary Officer has to the Principal Medical Officer; and a Sanitary Works Sub-department of the Public Works Department is formed comparable to the Sanitary Department as a branch of the Medical Department.

(3) The staff of Sanitary Inspectors for Freetown was strengthened by the appointment of a Superintendent Sanitary Inspector (Staff-Sergeant W. H. Jones, W.A.M.C.). Shortly before the close of the year sanction was obtained for provision for a whole time Medical Officer of Health for Freetown with no other duties to perform.

A body of instructions, rules and regulations for the guidance of the Sanitary Inspectors, and specially suitable for local circumstances, was prepared by the Acting Medical Officer of Health (Dr. W. Allan); it will be printed and interleaved in book form for local use.

II.—LEGISLATION.

The Freetown Municipality (Amendment) Ordinance No. 33 of 1913, to legalise the transfer of the administration of the Freetown Improvement Ordinance, 1899, from the Sanitary Department to the Public Works Department (sanctioned in October), was passed on the 15th of December.

III.—SANITARY DEPARTMENT OFFICES AND DEPOTS.

As it was considered impossible that the site of the present temporary offices in the old Freetown Prison should be required for the new Colonial Hospital buildings during the year 1914, the provision of offices elsewhere was not further discussed.

IV.—STREETS, STREET DRAINS, AND WATER COURSES IN FREETOWN.

The work of regulating the course of Moore's Brook (an intermittent stream having outfall near the Princess Christian Mission Hospital) was completed by the Public Works Department to the satisfaction of the Sanitary Department before the rains commenced. From its spring sources on the hillside of Kissy Road to its debouch under the railway line at Fourah Bay Road the brook course is now a sufficiently deep channel cut in rock and properly graded with practically no adventitious masonry or concrete supporting work which is likely to give trouble in the future by being underwashed or carried away. The natural conditions were favourable, and full advantage was taken of them in cutting the channel. The actual outfall on to the river beach has not been regulated, the Sanitary Department not insisting on this important point pending the further consideration of the comprehensive scheme for reconstruction of streets and drains in Freetown.

In the Annual Report of the Medical Department for the year 1903, the Principal Medical Officer (Dr. W. T. Prout) stated that in his report for 1898 he had pointed out "the necessity for a thorough survey of the town with the view of putting the surface drains in proper repair," and further that a beginning had been made so that in 1902 properly constructed cement drains were made in ten streets and the work was being further carried on, and "so favourably have I been impressed with the results that I sincerely trust an effort will be made to proceed with the work at a more rapid rate, and I think that in the meantime it should be confined entirely to the Grassfield district." The Ordnance survey of the town is now in progress; the comprehensive scheme of drainage waits.

V.—BROOKFIELDS DRAINAGE.

The intercepting drain at Brookfields described in the report for 1912 as having been "in part cut during the year," was cut to the length originally proposed and deepened in part to the limit allowed by its level at the railway culvert near the western outfall to Congo River. It is hoped that the work of deepening the rest of the drain will be completed about March, 1914, well before the rains commence, when the first stage of construction may be regarded as completed. Before the provision of a concrete bottom for the drain is considered, it will be advisable to have a series of holes "jumped" or bored in the drain bottom to allow discharge of water under pressure which may be tapped by the holes. Those trial holes which do not give exit to water from below could be easily filled up. Not till after this supplementary work has been done should the drain bottom be protected or any conclusion be arrived at as to the final limit in depth to which the drain should be digged. Incidentally these holes will afford some useful information as to the thickness of the easily quarried laterite rock which lies uncut below the drain bottom, and the presence and depth below, or absence at various levels, of syenite rock.

It seems desirable to emphasise that the prosecution of this enterprise to its proper conclusion is of great sanitary importance not only on behalf

of the Brookfields area, but also for the lessons it will teach, which will be applicable to other similar places.

VI.—WELLS IN FREETOWN.

It is not considered advisable to discuss fully in this report the subject of the wells in Freetown in connexion with public health. The position remains practically *in statu quo ante*, and what that is, is well known to all who have any knowledge of the reports by various experts who have visited Freetown for the purpose of advancing the interests of sanitation.

The wells in Freetown may be viewed from either of two chief stand-points: as sources of water supply and as sources of mosquito breeding.

Dr. W. Allan (Acting Medical Officer of Health) during the months of May, June, July and August made personal examination of the wells in Freetown to ascertain to what extent they act as breeding places for mosquitoes. His report was accompanied by a map, which, with the detailed records, besides teaching a lesson for the present, will be most useful in future enquiries. The copy of the map which is attached to this report has been simplified by omitting details referring to the particular kinds of mosquitoes found breeding in each case. The observation that the more frequently an insufficiently protected well is used the less likely it is, other things being equal, that mosquito larvæ will be found in it, supports the same observation made by the late Dr. Dutton in reference to the wells at Bathurst in the Gambia Colony.

The usefulness of wells in Freetown as sources of water for fire extinguishing purposes has been very much exaggerated locally, and their danger as sources of domestic supply has not been sufficiently appreciated. Though Dr. W. Allan's report is not exhaustive, sufficient reliable information is afforded to once and for all determine the question whether they are a danger as *Stegomyia* and *Anopheles* breeding places.

“The method of examination adopted was by means of a net, consisting of a barrel hoop of 2 feet diameter covered with two layers of book muslin. This was lowered down to the bottom of the well and then pulled rapidly up. The larvæ were examined for by washing the net in a large basin of water.

“The number of wells examined was 418, and in 22·5 per cent. of these larvæ were found. Of these *Culicales* were found in 75 per cent. and *Anophelinæ* in 34 per cent. Species of both *Anophelinæ* and *Culicales* were found in some wells. Of the *Anophelinæ* bred out and examined, *Anopheles costalis* was the species in every case. Of the *Culicales*, *Culex decens* was the most common species found. *Culex tigripes* was found in a few wells and in one *Culex insignia* was found. (All the above were diagnosed in the Imperial Bureau of Entomology.) *Stegomyia* was also found.

“With regard to the wells in which larvæ were found, the depth to the surface of the water varied from 1 foot to 30 feet, or even more. In one instance, that of a well at Fourah Bay College, the distance measured 64 feet, and here *Stegomyia fasciata* larvæ were found in large numbers. As a general rule, also, in these wells the covering was bad, there either being no cover at all or one made up of loose boards or sheets of galvanised corrugated iron. Where there was a good substantial cover, close-fitting but not necessarily mosquito-proof, and the water appeared to be clean and in frequent use, with the sides of the well in good condition, larvæ were less often found. In those wells where *Culicales* were found, the distance from the top to the surface of the water was usually over 10 feet and the water in most cases rather dirty.

“ *Anophelinæ*, on the other hand, seemed to prefer the wells where the distance was small, usually under 10 feet, and where the water looked clean but the walls in bad condition and overgrown with weeds, moss, etc.

“ In Division XI., which is in the Grassfields area of the city, where the subsoil water is high, the average depth to the surface of the water was 5 feet, and here 57·7 per cent of the larvæ infected wells found were infected with *Anophelinæ*.

“ In Division III., which is in the East Ward of the town, the average depth to the surface was 24·5 feet, and here the proportion of *Anophelinæ* infected wells was found to be 15 per cent. *Stegomyia* were found in wells, the water levels of which were at various depths. They seemed to prefer wells which were not in use, with old and disused covers and rubbish, pieces of wood, etc., floating on the surface of the water. The species of *Stegomyia* was found to be *Stegomyia fasciata* in every case.

“ I wish to point out that the above is not in any way an exhaustive report on the subject of mosquito-breeding in wells in Freetown. In the first place, over 250 wells were not examined for larvæ, so that the conditions in certain wells, especially in Divisions IX., XIII. and XIV., have not been ascertained. In the second place, the difficulty of finding larvæ, though present in the wells, is great; and the net method, although fairly reliable when larvæ are plentiful, does not remain so when they are scarce. In the third place, the examination was conducted during the rains, when the conditions necessary for mosquito larvæ breeding are different from what they are in the dry season, and I think an examination during the dry season on the same lines is necessary to make the report complete, besides forming an instructive comparison.

“ The result of the examination reported on above, however, I think, shows that during the rains at any rate many of the wells in Freetown in their present condition are, or may become, a fertile source of mosquito-breeding.

“ As a point of some importance in connexion with the pollution of wells, the distance from the nearest cesspit to the well was measured in 465 cases, and the average distance was found to be 37·3 feet.”

VII.—EXCAVATIONS, STONE QUARRIES, Etc., IN FREETOWN.

Reference to excavations, stone quarries and such like was made in the report for 1911, and a scheme for controlling them was outlined. The subject was not reverted to in the report for 1912. No action has been taken in this matter since, and it is not proposed to discuss it now. No doubt it will form part of the subject dealt with in the proposed draft Building Regulation Bill, and will be discussed when that measure is being considered. An illustration is appended to show something of the quarrying that is taking place in parts of the city, and over which there is no control either by the Government or the City Council.

VIII.—FREETOWN WATER SUPPLY.

The scheme for augmenting the Freetown water supply by gravitation from streams flowing from the Sugar Loaf Mountain in the Lumley Valley to join the Babadori River was approved, and work was commenced during the year. It is understood that it was also approved that a part of the scheme which it was at first intended should not be undertaken till later, should be commenced as soon as possible. As the Sanitary Department had

none of the details which made the latter part of the programme appear urgent put before it during the year, the subject is not discussed in this report.

Some correspondence took place on the subject of afforesting the old Catchment Areas. The view of this department was that no risk to quality should be incurred even remotely on behalf of quantity, especially as the work of ample augmentation of the supply is actually in progress. Neither storage nor filtration is practised, nor is it proposed for the new augmenting supply, and extra caution is therefore necessary.

In connexion with the increase of the water supply of Freetown, the Principal Medical Officer (Dr. W. T. Prout) in his report for 1902 reported, "It cannot fail to have a very beneficial effect on the health of the city, permitting, as it will do, of the closure of the numerous polluted wells and springs which are now the only source of supply in many parts of the town. Several subsidiary points, from a health point of view, will have to be dealt with in this connexion. First, the closure of *all wells* will have to be made compulsory by law . . ." (The italics are in the original.) It remains to be seen if the further augmentation of the city water supply now in progress will be considered to justify the closure of wells.

IX.—SLAUGHTER HOUSE, FREETOWN.

The provision of a new slaughter house to replace the existing one was referred to in the report for 1912. No action has been taken since with regard to it.

The military authorities have made arrangements by which slaughtering is done by their contractor in premises owned by them, but the meat not used by the military is sold to the public.

The following table gives the numbers of animals slaughtered in the slaughter house during the year :—

Bullocks.	Sheep.	Goats.	Swine.
4,098	376	17	32

and in the Imperial Military Slaughter House, May to December inclusive,

Bullocks.	Sheep.
500	232

On account of infection with *Cysticercus bovis*, 20 bullocks were seized during the year at the slaughter house, and were destroyed by order of the Magistrate.

From time to time petitions have been received from the butchers in Freetown relative to the seizure and destruction of meat by the Sanitary Authority. As a result of one of these petitions, supported by 36 butchers, the subject was carefully considered in several conferences with them. Suggestions were put before them for forms of contract between buyer and seller—schemes of insurance—treatment of the condemned meat, etc., but none proved satisfactory to them. The cattle are bought by them at the live cattle market at "Mabela," where most of the cattle from the other side of the river (Bullom) are landed from canoes. Though large importations of "humped" cattle have been formerly brought from Conakry and Dakar by steamers, that source of supply is intermittent and irregular, and probably importation by sea from French Colonies takes place only as a result of some local trade difficulty between butchers and stock raisers. While the butchers might be classified into three groups—native selling in public markets; native selling in shops, and "European"—the cattlemen can be regarded only as an indefinite number of scattered individuals. So far as the beast is concerned

the main, if not only, compelling influence making sale imperative is its ill-health; that if not sold it may die and represent a total loss; otherwise the same beast may be brought across the river to market over and over again till some circumstance enables the owner to obtain the price he thinks it is worth, though a small fee is charged by the City Council for each beast exposed for sale in the market and each day it is exposed. It appears that any arrangement by which the seller is made a party to a contract cannot be expected to be satisfactory. Naturally the question of compensation arose, and suggestions have been made which are receiving consideration. If an equitable scheme can be found and adopted there can be no doubt that besides protecting butchers against total loss, which they are at present unable to avoid, it would have the effect of facilitating the work of inspection, and possibly maintaining a more even price to consumers, if not actually reducing it all round. Many details necessarily complicate discussion on this subject, and this report is scarcely the place for setting them out. One important point, however, may be referred to, namely, that infection with *Cysticercus bovis* has been practically the only cause of condemnation of fresh meat in Freetown, and this cause is indeterminable before slaughter. Further, the treatment of such meat by "pickling" has for its end the preservation of the meat over a period of 14 days or more, when the cysticercus may be presumed to have died rather than the direct destruction of the parasite by the meat preservative.

X.—MOSQUITO INDICES.

Inspections were made from time to time throughout the year to determine the Mosquito Index of Freetown, and the results are given below in abbreviated form:—

In February, 7 infected compounds were found out of 250 examined or 2·8 per cent.

In May, 14 out of the same number or 5·6 per cent.

In August, 10 or 4 per cent.; and

In December (from 15th to 20th), 8 or 3·2 per cent.

Cases where larvæ were found only in plant-borne water are not included, but where found in wells are included. The places where larvæ were found were mostly articles in use for domestic purposes, such as barrels, native pots, native "medicine" pots, kettles, tubs, drums, etc. In order that the index might represent the general condition, 10 divisions of the city were examined and 25 compounds in each were inspected. The information was not obtained from the native Sanitary Inspectors, but by the personal visits and examination of the Acting Medical Officer of Health himself in February, May and December, and in August by the Superintendent Sanitary Inspector (Sergeant W. H. Jones, R.A.M.C.).

XI.—FREETOWN POLICE COURT LARVÆ CASES.

The number of larvæ cases convicted in the Freetown Police Court during the year was 753, and the total amount of the fines was £183 4s. 9d., which represents an average of just over 4s. 10d. each. As these are now Government prosecutions there are no costs.

XII.—RAT DESTRUCTION IN FREETOWN.

The number of rats brought to the Colonial Hospital paid for and destroyed was 2,816.

The number of dog licenses issued in Freetown by the police during the year was 695. The number of stray dogs captured was 491, claimed 120 and destroyed 371.

XIII.—VACCINATION IN FREETOWN.

It was not considered necessary to undertake formal enquiry during the year to revise the record obtained in the year 1912 of the percentage of school children who had been successfully vaccinated. The Public Vaccinator (Mr. Adolphus Coker) performed vaccination in Freetown as an officer of the Sanitary Branch, but it has been arranged that in future he will perform this work as an officer of the Medical Branch.

XIV.—PORT SANITARY WORK, FREETOWN.

With frequently recurring notifications of cases of yellow fever elsewhere in West Africa, either ashore or on board ships, the subject of Port Sanitary Work at Freetown is steadily demanding more attention.

The importance of Freetown as a port need not be enlarged upon, but it may be briefly stated that probably a larger tonnage of shipping visits Freetown than any other West African port, and in most cases during these visits business is transacted. From the Port Sanitary point of view the most important transaction, apart from the landing and loading of cargo, taking water, provisions and coal, landing and receiving passengers, and signing on native crews, is the landing and signing off of native crews, which not infrequently number as many as 70 or 80 persons.

It is unquestionably desirable that all vessels at Freetown which have called at West African ports should be medically inspected. In the matter of yellow fever prevention the work of reducing to and maintaining the mosquito index at the lowest possible figure is of paramount importance, transcending even the work of prevention of the introduction of cases. What could be done in medically inspecting vessels was done, and more was tried, but it became apparent that with the present staff the desirable degree of mosquito reduction and the routine inspection of all ships which had called at Windward (South) ports (not at *any* West African ports) was impossible. This report is not the place, as a rule, to eulogise officers, but it may be added that the Acting Medical Officer of Health worked hard while the experiment was being tried. The strain of constantly "standing by" for calls from the Harbour Master's Department to inspect ships from morning till night, and at the same time giving the personal attention necessary for the sanitary work in the city, would be too severe mentally, even if it were possible physically. Proposals have been initiated with regard to a Port Sanitary Staff, but details need not be given here. The subject of greater facilities for ships' fumigation has also been put forward.

Reference to the Annual Report of the Comptroller of Customs for the year 1912 shows that in that year 666 *steamers*, with total of 1,331,719 net register tonnage, entered at Freetown. Of these steamers 456 were British and 176 were German. Though natives form a very considerable proportion of the persons on the articles of these steamers, the number of Europeans who arrive at Freetown employed on steamers must be large, and the conditions of health of such persons is of importance to ports at which the vessels call. The health statistics of European Government Officials in British West Africa have been shown to have much improved in recent years. Such persons are under a certain degree of control, as are presumably also employees on board ships. There are no local statistics which enable any

conclusion to be arrived at as to what degree of improvement (if any) has taken place in the health records of employees on the articles of ships trading on the West Coast of Africa. This is not an unimportant subject, and investigation of official statistics for, say, the last 10 years would probably throw sufficient light on it to enable one to judge in what direction further enquiry should be instituted. The health of British (white) seamen was the subject of legislation in the early days of the Colony's history, when it was shown how fatal to them visits to "the rivers" usually were. White seamen are no longer employed in rolling and rafting logs to ships in the Sierra Leone rivers, and without doubt their health is vastly better than it was in those days, but has it improved during what has been called the "Rossian period"?

XV.—THE CAPE SANITARY STATION, FREETOWN.

The Sanitary Station at Cape Sierra Leone, at the mouth and on the south bank of the river Sierra Leone, was used twice during the year for the observations of persons from on board ships.

From the S.S. "Elizabeth Brock" 75 natives, and from the S.S. "Monrovia" 41 natives, were received. It has been found that the fees chargeable do not cover the actual current expense involved by the Government, and proposals will be made which, if adopted, will have the effect of at least reducing the deficit.

Proposals were made and have been sanctioned for additional buildings at the Cape Sanitary Station.

XVI.—CLINES RAILWAY RESERVATION.

In consequence of information received from the Medical Officer in charge of the Clines Reservation at Cline Town (which forms the most easterly part of Freetown) that a number of European Officials were suffering from intestinal disorder, the Acting Medical Officer of Health investigated the matter with the Medical Officer, and with pursuit in other directions also, they followed up the water supply pipes serving the quarters where the affected persons were or had been. The source of supply was found to be from the Mountain Torrent, a stream which runs below the village of Leicester between that village and the village of Gloucester. It was known to the Sanitary Department that from a dam in the stream below these villages, pipes conveyed water to Clines Reservation, but it was understood that the water was distributed and used only for "commercial" purposes, engine tanks, workshops, etc. There has never been even a pretence of guarding this source from pollution. It was perfectly well known that the inhabitants of Leicester village wash themselves, and clothes, in the stream, and that the stream bed, after the heavy rains are over, is extensively used for market gardening. Other associated matters which are considered equally serious were brought to the notice of the Sanitary Department in the progress of the discussion which followed. The whole matter was still under consideration at the close of the year. The question of the use of the Mountain Torrent as a source of drinking and cooking supply is one which does not admit of compromise. Gangs of men were regularly employed clearing refuse from the bungalows, yards, etc., and burning the consumable material in the incinerator. Night soil from quarters were buried in the trenching ground and all drains kept clean. During the year, 1855 feet of concrete drains were laid in the Reservation.

Though money was provided in the Estimates for the erection of a shed in which such railway materials, as no ingenuity in stacking in the open would obviate retention of water in, might be stored, the work was not proceeded with. In the past it has not appeared that such provision could be satisfactorily done without; however, it remains to be seen whether during the next rains past experience will be repeated, and mosquito larvæ found in railway materials (not necessarily "scrap") within the reservation, or whether the exercise of ingenuity and care will so reduce the water retention in materials in the open that no extra storage will be required. If it may be so expressed, the Sanitary Department has exhibited a considerable degree of patience in this matter, but it is not considered equitable that less should be expected of a Government Department than is required of trading firms and private individuals, and it is essential that the public should not have cause to suspect the Sanitary Department of unequal dealing.

XVII.—SYRIANS IN FREETOWN.

The "Syrians" in Freetown are a rapidly increasing community. They are located mostly in a few streets in the eastern part of the Central Ward of the city, but have spread also into other parts in the last few years. As complaints against them, based on sanitary grounds, are not infrequently heard, it is thought well to give some details here regarding them.

At the time of the yellow fever outbreak in Freetown in the year 1910 (May), a special census of Syrians showed that 72 were in the city and occupied (part or all of) 55 premises.

In the year 1911 (April) the census return showed 145 Syrians were then present. The result of a census recently taken specially for the purpose of this report shows that there are 212 Syrians now in the city, of whom 161 are adult males, 26 adult females, 13 male children and 12 female children; occupying part or all of 110 premises. Some of these are part of a "floating" Syrian population. The Syrian naturalised British subjects are not included in the above numbers; nor are several who were in Freetown on business for a day or two. The great majority of the Syrians live in the same streets as they did in 1910. The late Sir Rubert Boyce laid stress on the importance of the Syrian (non-immune) population, living in close contact with natives, as an indicator or "thermometer" to give early evidence of the presence of yellow fever. Since his visit in 1910 (*i.e.*, in three years), the Syrians have spread slightly to other parts of the town and have nearly trebled in number, while the number of places of residence has doubled. Only children of apparently unmixed parentage were counted, and the presence of 25 children, most of them of tender age, is remarkable. The Syrians in Freetown are a law-abiding people, and give little cause of complaint by the Sanitary Department. The circumstances under which they live are not such as to afford ground for the most common complaint by the public against them (*viz.*, overcrowding). Owing to their success as traders, both in Freetown and the Protectorate, there is naturally a strong feeling of jealousy entertained by their less gifted rivals.

XVIII.—ENTERIC FEVER IN FREETOWN.

Towards the latter portion of the year three officers in the Imperial Service were reported by the Military Medical Authorities to have recently suffered from enteric fever, believed to have been contracted through eating mangrove oysters obtained from Aberdeen Creek at mess on "guest night." One case proved fatal. Another case (not fatal) was reported of a native soldier at Wilberforce Barracks, and the Royal Army Medical Corps Officer,

in temporary charge of the Princess Christian Mission Hospital, reported a case of a young native girl (from the East Ward of the city) as suspected enteric fever (not fatal).

With the recently increased laboratory facilities at the disposal of the Colonial Medical Authorities, no doubt the question of the prevalence of enteric fever in Freetown will be cleared up.

The three officers referred to above were treated at the Military Hospital at Mount Aureol Barracks and the native soldier at Wilberforce Barracks, both outside the city limits. Though it naturally causes anxiety on behalf of the public health that cases of enteric fever should be reported in the Colony, it is useless to forecast or prophesy in how far local conditions justify special gravity being attached to the circumstance. The large number of wells in the city, the custom of eating directly out of the hands, the habit of defæcating on the ground at any shaded or secluded spot, etc., etc., tend to dispose one to expect that enteric fever once established should spread rapidly. There may be undetermined factors which counterbalance these considerations, but such a possibility cannot justify relaxation of efforts in prevention. Provision for accommodation, and, if necessary, for compulsory detention in the new Colonial Hospital, will prove a most valuable preventive measure.

XIX.—METEOROLOGICAL RETURNS.

The chief interest in the meteorological returns, so far as the Sanitary Department is concerned, centres in the rainfall records. It is not considered necessary to reproduce in this report the rainfall chart showing the fall month by month inserted in the Annual Sanitary Report for the year 1911, and which included 30 years' records.

The total rainfall for the year 1913 recorded at the Tower Hill Observatory by the Imperial Military Authorities was 124·46 inches. Reference to the charts in the Annual Reports for 1911 and 1912 shows that the total is a little lower than that recorded for the year 1895 (124·79), but whereas the low fall in that year was preceded by an average fall of 155·00 inches in 1894, and succeeded by an almost high record fall of 203·55 inches in 1896, the low fall of 1913 was preceded by practically a series of six years, during which the fall in each has been less than in the one before. The year 1882 (the first in the charts) still holds the low record (107·17 inches), and the following year, 1883, still holds the high record (204·14 inches).

The record published by Boyle and accepted by Horton of the rainfall at Freetown, taken at the Military Hospital in 1829, showed a total of 303·90 inches for June (64·55 inches), July (125·55 inches) and August (123·80 inches). Horton thought these records went "far to prove that there are sensible differences between the meteoric phenomena of the last 30 years and the present time" (1866).

The influence the diminished and apparently diminishing rainfall at Freetown may have had or have on the public health of the town would form an excellent subject for scientific debate, but the scope of this report is not such as to permit its full discussion here.

If the shrinking rainfall means perpetuity of the wells, which cannot be otherwise than polluted, then the shrinkage is to be deplored on that account. If the reduction in rainfall results in less surface water stagnation in the city, it is in that respect advantageous.

It is of interest to note that the rainfall for the year when the first expedition from the Liverpool Tropical School visited Freetown (1899) was an average one (146·62 inches), and followed a year with about the same

total (144·64 inches). In the year of the First Progress Report (1901) the rainfall was high (198·82), and for the following year, in which the Second Progress Report was published, the rainfall was also high (183·31 inches). Freetown was included in the report of the expedition of 1905, when the rainfall was 170·92 inches; and while the following year's record was almost identical, there has been no such high annual rainfall since. The decline to 124·46 inches in 1913 has been practically continuous. It appears, therefore, that while the expeditions studied the local conditions bearing on the subject of malaria under circumstances favourable for such enquiry, the meteorological conditions, so far as rainfall is concerned, have altered somewhat. It is not suggested that such alteration invalidates in any way the findings of the expeditions, or their applicability to the present conditions.

XX.—BONTHE AND YORK ISLAND.

In the Report for 1912 the fact that a special report on the subject of sanitary works for Bonthe and York Island had been made by the Senior Sanitary Officer and the Sanitary Engineer was recorded without details or descriptions of the schemes put forward for filling swamp areas, for improving water supplies and other matters. It is not considered necessary to discuss or describe them here, as there did not appear to others to be any great urgency for the work, and the heavy expenditure on other works, for which provision has to be made in the Estimates for 1914, necessitated postponement of even preliminary work in connexion with the special report referred to above till the year 1915. The somewhat detailed report on Bonthe and York Island, included in the Annual Report for 1912, was inserted with the intention of conveying some idea of the responsibility of the position of Medical Officer there as Medical Officer of Health, the amount of work required and the care and attention that holders of the office had given to their duties. It is not considered necessary so soon again to deal with the same subjects in similar detail. There is unfortunately little to report that cannot be gleaned from the "Summary of Routine Sanitary Work done."

A second incinerator has been completed at Bonthe and has been in use for some months.

The making of borrow pits was regulated some years ago, and now only about four remain, and they are being gradually filled up with rubbish suitable for the purpose.

The large hole behind the river wall at Bonthe has been filled up to road level under the direction of the District Commissioner.

The crab-holes at Bonthe and York Island are undoubtedly sources of mosquito-breeding as elsewhere, and dealing with them by any radical permanent means is difficult if not impossible by minor works. The plan adopted by the manager of the "Old Company" at York Island of pouring a mixture of coal tar and boiling water into the holes—when, if the crab is not killed thereby, it "bolts" and is killed in the open, and the hole is filled up—is reported as successful so far. No doubt this work must be frequently done to kill off fresh invaders.

XXI.—BOIA RAILWAY RESERVATION.

For several years the project of supplying the Boia Junction Railway Native and European Reservations with pipe-borne water supplies has been under consideration. Before the close of the year good progress had been made. The scheme consists in supplying stream water from a reserved area

about $1\frac{1}{2}$ miles away, pumped by a hydraulic ram to cisterns for the supply of engine tanks and the native employees' reservation, and an entirely separate supply from a spring source also pumped through pipes for the European officials' reservation. What has been already described as having happened at Clines Reservation suggests that it should be clearly understood by all that the two systems at Boia should be kept separate, and that no valved or other connexions should be allowed between them at any point if sanitary requirements are to be observed. It is perhaps too much to ask that, after the scheme has been finally inspected and passed by the Sanitary Department, no pipe connexions of any kind should be made till the approval of the Sanitary Department has been obtained, and yet there seems to be no other way to make sure that alterations which may be done in the future will not have the effect of nullifying safeguards arranged at the inception of the scheme. It is recognised that this is a bold view to express, but, as has been explained, there are reasons which justify it. The water-gathering ground which concerns this scheme was inspected, and the area it was considered necessary should be reserved and other points of detail were reported on by the Senior Sanitary Officer.

XXII.—RAILWAY CONSTRUCTION.

The work of railway construction on the branch line from Boia Junction has passed Makump Station. The Railway Reservation at Makump Station was inspected, and recommendations were made regarding it by the Senior Sanitary Officer. In brief, the chief points on which emphasis appeared to be desirable was that sufficient area should be included for railway use, extension of works, and housing of employees before other interests were established which would embarrass action of this description desirable for railway development. It is no doubt true that too wide separation of traders' reservation from the station centre and of traders from one another might handicap trade and traffic at that station, but it is no less certain that too cramped a Railway Reservation at certain stations (and Makump is judged to be one of them) will result in handicapping trade and traffic at many stations. It may not be apparent at first sight why these reflections appear in a sanitary report, but it is not infrequently heard that owing to trade considerations sanitary requirements are undesirable or impossible.

The next station site is expected to be at Makene, on the west side of the Rokelle River, some distance away, near where the site for a West African Frontier Force Barracks has also been selected.

XXIII.—SANITATION IN THE PROTECTORATE.

The position of sanitary administration in the Protectorate remained during the year as it has been described in the Reports for the years 1911 and 1912.

The first drafts of proposed legislation were subjected to local criticism, and many alterations have been suggested as a result of the revision.

It appears most probable that the final stage of preparation will be reached at an early date. It cannot be said that the ground work has been hurriedly or carelessly done. There can be no doubt that some such measure as that proposed is required, especially in some parts of the Protectorate, with as little delay as is consistent with free discussion, full consideration, and close co-operation between, by and with District Commissioners and the Sanitary Department. No useful object would be gained by reference to details of this subject at this stage in this report. The information given in previous Annual Reports concerning the "Protectorate Towns Sanitation

Scheme " inaugurated in the year 1905, and the lists which have been given showing the prize winners under the scheme, sufficiently indicate that the time has come when advance to a second more advanced stage cannot be justly considered premature. It is inevitable that sanitary progress must be uneven both in time and place. Geographical difficulties embarrass some places; superstitions and religious prejudices obstruct in some directions; physical and mental disability of chiefs tend to negative advance while they last; or the competition for labour on behalf of important public work may temporarily handicap local sanitary progress. But on the whole it may be said that progress has been maintained.

No outbreaks of epidemic disease have been reported during the year. Medical Officers stationed in the Protectorate, and the Medical Officer at Waterloo (Headquarters District), furnished " patrol " reports. The number and length of the " patrols " reported by Medical Officers varied with the opportunities which presented themselves, and such opportunities naturally depend largely on the circumstances of the station. The reports sent in by Drs. R. Orpen and J. Y. Wood (from Batkanu and Kaballa) showed special interest and diligence, and care in the manner in which the reports were furnished. It fell to Drs. Bremner and Ward, while stationed at Waterloo, to report on the Colony villages of the Peninsula, where the conditions and circumstances are radically different, and, if possible, in many ways more difficult than in most places in the Protectorate.

XXIV.—WATER SUPPLIES TO TOWNS IN THE PROTECTORATE.

The scheme outlined in the Report for 1912, for providing water supplies where necessary to towns in the Protectorate, was in charge of the Sanitary Department up to the date of the transfer of the Sanitary Engineer and his staff to the Public Works Department in the month of October. With the assistance of District Commissioners and Medical Officers, information was obtained which enabled a first list of towns to be prepared, which it was judged would provide full work in well-sinking for the period of the dry season suitable for such work in the places it is required. Of course convenience for transport, facility of inspection of work in progress at the same time in different places as well as the relative needs of the town were, with other points, given due consideration when the list of towns was being made by this department. So far as the details of work are concerned the scheme has passed to the care of the Public Works Department. Many towns in parts of the Karene and Ronietta Districts especially, which may have comparatively wide and deep rivers running through or near them during the rains, and perhaps for some months afterwards, may be for two or three months in distress from lack of even a passable water supply, owing to the complete drying up of the rivers. It was on behalf of such towns that the scheme was proposed, and the provision of wells was judged to be the means by which the needs of the greatest number of places could be met in the shortest time, and the way which could be most readily understood and imitated by chiefs of other towns in the neighbourhood of those included in the scheme. The scheme is intended to be a " popular " one in its working to directly assist the people, and not for the use or for direct assistance to the Government.

XXV.—RIVER OVERFLOW SWAMPS.

Reference is made above in this report to the fact that in many places, especially in some parts of the Protectorate, where, during the rainy season and early in the dry season, abundant water is obtainable, later, for perhaps

three to four months before the rains commence, very serious scarcity of water exists. This is the result of long drought and free drainage. After the rains commence, and when they become continuous and torrential, many of the large rivers overflow their banks, and, by their rise in level, cease to allow the free passage of drainage from low-lying areas beyond their banks. Inasmuch as the largest towns are generally placed near the largest natural water supplies, this overflow is a particularly unfortunate occurrence from the public health point of view. Most usually the depression in the bank which in the dry season allows exit for the stream draining the low-lying area to the river, is a narrow one compared to the area drained. When the water level rises in the river the low-lying area becomes a lake from the combined effect of overflow from the river and retardation of drainage. Of course it is not beyond the power of engineering science to deal satisfactorily with such situations, but in the Protectorate of Sierra Leone such schemes are not feasible. As was pointed out in a previous Annual Report, such low-lying areas, where desirable on account of their proximity to towns, should be thoroughly cleared of low bush, so that as the water rises the appearance of a lake with surface unbroken and with even edges is presented, except perhaps where the trunks of tall trees carry branches and foliage above it. The subject is reverted to because the measure is a very simple one for political administrators to encourage.

XXVI.—“REST HOUSES” IN THE PROTECTORATE.

It seems desirable to amplify the very condensed reference to the subject of “Rest Houses” in the Protectorate in the Annual Report for 1912.

The Sanitary Department is not by any means so anxious for the improvement of “Rest House” conditions in places where it is usually possible for officers, owing to the kindness and courtesy of brother officers or European trading firms, to obtain lodging alternative to occupying the “Rest House,” as it is for the improvement of “Rest Houses” and “Rest House” conditions where no such alternative can exist. “Rest Houses” may be divided into various classes :—

(1) Those built by, or to the order of, and paid for by the Government, which pays a subsidy for or directly undertakes their upkeep.

(2) Those built by chiefs or headmen at their own expense, but for the upkeep of which a small subsidy is given by the Government.

(3) Huts which are simply chiefs', headmen's, or Native traders' guest houses.

Naturally the chief or Native trader who provides a guests' house as rest house on his own initiative places it in an honourable social position, close to his own hut or house, probably near the centre of his town, rather than in an isolated position. It may happen that the hut occupied by a European Official in transit is a hut which has been vacated by its Native inhabitants less than an hour before his arrival.

The temporary rest camps for use in the dry season only, which are called Governors' Camps in the Gambia, where land travelling by Europeans is performed only in the dry season, are not considered here in connexion with rest houses, as they do not affect the ordinary official in Sierra Leone.

Through the kindness of Dr. J. Crawford Maxwell, C.M.G., District Commissioner of the Railway District, a complete list of (38) subsidised rest houses in that district was obtained and is as follows :—

RAILWAY DISTRICT.

<i>Town.</i>	<i>Chiefdom.</i>
Bo.	Big Bo.
Blama.	Small Bo.
Bunjayma.	Wunday.
Bendu.	Tongboma.
Baiima.	Mando.
Bariwalla.	Deah.
Bonibu.	Pejah West.
Bendu.	Yarway.
Boadgibu.	Symbaru.
Geehu.	Konjo.
Gerihun.	Baoma.
Galu.	Bergbeh.
Jojoyama.	Malema.
Mamboma.	Bongray.
Kamboma.	Wandoh.
Largo.	Nongowa.
Manowa.	Pejah East.
Nagbena.	Bongor.
Pendembu.	Pendembu.
Sundumeh.	Niawa.
Sandaru.	Gowia.
Sembehu.	Horahun.
Sumbuya.	Lubu.
Segbwema.	Jalluahun.
Tikonkoh.	Tikonkoh.
Upper Sarma.	Lubu.

KONNOH SUB-DISTRICT.

Baiama.	Levuma.
Gandohun.	Banni.
Jagbwema.	Taiama.
Jahama.	Nimi Konnoh.
Jaiama.	Nimi Yema.
Komatindu.	Penguia.
Keinkordu.	Soa.
Kangoma.	Gonrama.
Kayima.	Sandoh.
Tumberu.	Kamara.
Yamadu.	Sandoh.
Yardu.	Bensoy.

It is understood that at only two of these towns was the chief paid for the erection of the rest house, which of course includes kitchen, servants' quarters, etc., and at only one of these towns (Blama) was the money paid by the Government. Dr. Maxwell also supplied a list of towns numbering 116 in the Railway District at which the District Commissioner and Assistant District Commissioners slept between the 1st July, 1912, and the 30th April, 1913, with the number of nights in each place in that period. This list is not reproduced here because it might lead to a fallacious conclusion, owing to the absence of details as to the number of nights which were spent in the same towns by officials other than the District Commissioner and Assistant District Commissioners of the Railway District, such as those of the Forestry, Agricul-

ture, Bo School, Roads, Public Works and Medical Departments, and Officers of the West African Frontier Force, etc., and the District Commissioner and Assistant District Commissioners of the Northern Sherbro District en route to and from their district. It will be sufficient for present purposes to state that exclusive of Bo and Blama there were towns within the dates given above where the numbers of nights spent by the District Commissioner or Assistant District Commissioners were 28, 27, 23, 21, 18, 15, 13, 12, 11, and at some of these the best that can be said is that "a house is reserved in the town" as a rest house. It is clearly recognised that it is impossible and never will be possible to provide a suitable rest house properly reserved at every town at which European Officials may have to sleep. Though a very great deal may be done in this direction, it is judged that there will still be an increasing number of towns which it will become the duty of European Officials to visit, but it will also hold that the towns infrequently visited now will be much more frequently visited in the future. A scheme providing for automatic systematic expansion is required, and it would not be difficult to devise one. The provision of better lodging arrangements for those travelling on duty should be complementary to the improvement in their housing at their headquarters. These remarks are intended as supplementary to the reference to the subject of rest houses in the report for 1912.

XXVII.—ENTOMOLOGICAL RESEARCH.

As the report by Dr. J. J. Simpson, M.A., on his tour in the Colony and Protectorate of Sierra Leone from March to November, 1912, published in the Bulletin of Entomological Research, Volume IV., November, 1913, was received in Freetown while this report is being prepared, it is fitting that reference should be made to it here. The matter of Dr. Simpson's report will have, no doubt, much interest for Medical Officers as such, and probably still more for them as Medical Officers of Health.

It would be out of place to enter on any criticism or discussion of details in that report, even where energetic criticism regarding sanitary matters is expressed or inferred. But two points will be referred to. The statement that "Freetown has always had a bad reputation for mosquitoes" is not correct. The prevalence or otherwise of mosquitoes was not likely to be overlooked by travellers and others, and anyone who is acquainted with the descriptions of Freetown given by the older writers will know that the comparative freedom of the town from mosquitoes was frequently noted by them. The inhabitants of Freetown and Bathurst (Gambia) in the "old days" indulged in debates regarding the advantages of their respective towns. The boast of the Freetownians that they were troubled by fewer mosquitoes was met by the assertion that the cause of this was not creditable to Freetown; the cause assigned by the Bathurstians being that Freetown was too unhealthy to allow mosquitoes to prosper there! Of course, it was not understood then that quality is more important than quantity of mosquitoes. The statement that "practically nothing is known with regard to the species of mosquitoes which are implicated in the transmission of the disease" (malaria) is remarkable in view of the very definite statements on the subject in text books.

Dr. Simpson's report is considered most valuable, and all will join him in the hope he expresses that it may stimulate others. The publication has happily coincided with the completion of the preliminary settlement of details for the draft regulations proposed under the draft Public Health (Protectorate) Bill, and much information is put in convenient form for Medical Officers and others which will be of great assistance to them when the Bill becomes law.

The Sanitary Patrol Reports of Medical Officers had already given a fairly good general impression of the entomological conditions existing in some districts, at least so far as the better known flies are concerned; but it could not be expected that such reports would show the accuracy in detail and the systematic method so instructively exhibited in Dr. Simpson's report. Medical Officers will take it as a model in the entomological part of their sanitary work.

Dr. Simpson clearly points out the importance of seasonal variation in connexion with this subject, and the need for intimate guidance of the Native rulers of the people in sanitary matters is no less clearly brought out in his remarks. It is hoped that some day it may be agreed that there shall be officers in the Medical and Sanitary Department with districts, but no headquarters assigned to them, whose duty it will be to travel during the whole tour of 12 months in the interests chiefly of preventive medicine. As a result, action based on provisions of the proposed Ordinance should follow not only more consistently, but more uniformly over the country. It has been pointed out in former reports that Protectorate Medical Officers can naturally give only their "spare time" to sanitation outside their headquarters, which are in some cases of no great sanitary importance; and in some places their medical responsibilities are such as to preclude investigation beyond their headquarters except at comparatively rare intervals. Up to the present the subject of "patrol" reports has been most largely the sanitary condition present, and a useful mass of information has been collected with respect to some districts, but others have been scarcely or not at all touched even to this extent. What is required is that action should follow, and the passing of the proposed Ordinance will make this possible; but without some such scheme as is hinted above, by which "patrolling" can be systematic, action can be only irregular and casual, and therefore largely ineffective and confined to a few districts only.

XXVIII.—PROTECTORATE SANITATION PRIZE WINNERS, 1913.

DISTRICT.	CHIEF.	TOWN.	PRIZE.
Headquarters ...	No recommendations.		
Sherbro ...	No recommendations.		
Ronietta ...	No recommendations.		
Karene ...	Alimami Suri ...	Samaia ...	Certificate.
	Alimami Samba ...	Gbinti ...	Sword and Certificate.
Railway...	Komay... ..	Bogboabu (Koya Chiefdom) ...	Sword.
	Kenney Coker ...	Jimmi (Upper Big Bum) ...	Sword.
	Humonyah ...	Kennema (Nongowa Chiefdom) ...	Certificate.
	Kutubu ...	Pendembu (Pendembu Chiefdom) ...	Certificate.
	Farmer ...	Panguma (Bambarra Chiefdom) ...	Certificate.
Koinadugu ...	Sandi ...	Ghania (Kaballia Chiefdom) ...	Sword.
	Dusi Suri ...	Mussaiya... ..	Certificate.
	Kamba Suri ...	Kamba (Fullasabba Chiefdom)... ..	Certificate.
Northern Sherbro ...	Gbujahun ...	Futa (Pejeh Chiefdom) ...	Sword and Certificate.
	Ansumana Kai Kai ...	Pujehun (Kpanga-Sowa Chiefdom).	Sword and Certificate.

METEOROLOGICAL OBSERVATIONS IN FREETOWN—1913.

MONTH.	AIR TEMPERATURE IN SHADE.		TOTAL RAINFALL FOR THE MONTH IN INCHES.	ATMOSPHERIC PRESSURE.		REMARKS.
	Maximum.	Minimum.		9 a.m.	3 p.m.	
January ...	95·0	70·0	0·02	30·000	29·805	Highest Temperature in Sun—138·0, 8th Jan.
Means ...	90·7	73·6		29·967	29·887	
February ...	95·4	71·0	Nil.	30·024	29·787	,, ,, ,, 140·8, 28th Feby.
Means ...	90·5	74·1		29·960	29·877	
March ...	96·4	72·0	Nil.	30·023	29·810	,, ,, ,, 140·4, 29th March
Means ...	90·9	73·9		29·962	29·878	
April ...	94·2	71·2	·13	30·026	29·771	,, ,, ,, 147·4, 5th April.
Means ...	92·2	75·7		29·919	29·845	
May ...	101·4	67·6	6·44	30·048	29·779	,, ,, ,, 150·6, 7th May
Means ...	91·3	72·9		29·949	29·873	
June ...	94·8	67·4	14·99	30·065	29·868	,, ,, ,, 149·6, 11th June
Means ...	90·1	72·1		30·013	29·942	
July ...	91·0	66·0	31·84	30·115	29·926	,, ,, ,, 152·0, 10th July
Means ...	85·9	70·2		30·005	29·997	
August ...	87·0	67·0	36·22	30·083	29·896	,, ,, ,, 151·0, 25th August
Means ...	83·1	70·2		30·030	29·966	
September ...	92·0	66·0	24·36	30·059	29·884	,, ,, ,, 149·0, 7th Sept.
Means ...	85·7	69·7		30·010	29·947	
October ...	92·2	67·0	6·38	30·064	29·829	,, ,, ,, 148·0, 1st Oct.
Means ...	86·9	70·1		30·018	29·951	
November ...	91·4	66·0	3·22	30·029	29·843	,, ,, ,, 151·0, 4th Nov.
Means ...	89·0	70·6		29·986	29·918	
December ...	92·0	60·0	0·88	30·077	29·855	,, ,, ,, 135·0, 5th, 11th, 13th, 17th, 18th and 19th Dec.
Means ...	88·1	70·0		30·025	29·952	

METEOROLOGICAL OBSERVATIONS AT OUT-STATIONS—1913.

STATION.	TEMPERATURE.						Relative Humidity.	Total Rainfall.	Number of Days that Rain fell.	Greatest amount on one Day.	REMARKS.
	Mean Maximum.	Mean Minimum.	Average Mean.	Mean Diurnal Variation.	Highest Recorded.	Lowest Recorded.					
Batkanu ...	90·31	71·50	80·9	18·83	99·8	61°	83·79	INS. 103·65	153	INS. 3·97	
Bo ...	82·8	62·7	72·7	21·9	99·6	60°	76·4	100·32	143	3·78	
Bonthe ...	83·59	69·78	76·68	12·089	93°	69°	70·01	135·72	129	5·20	
Daru ...	89·8	69·23	79·56	20·37	103°	58°	79·1	96·59	175	3·49	
Kaballa ...	88·10	66·1	77·10	23·9	102°	54°	77·1	87·47	130	3·7	
Kissy ...	85·5	76·5	81	8·60	95°	61°	75·58	108·59	134	4·00	
Moyamba ...	90·13	69·97	80·05	20·32	100°	61°	71·42	96·25	155	4·48	

TABLE IV.

No. 1.

SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR
IN THE TOWN.

1. Name of Town : FREETOWN.

—	Approximate area.	Number of proclaimed open spaces.
1913 	2 $\frac{3}{4}$ square miles.	2 Public Recreation Grounds.

2. Population.

—	No. of Natives.		No. of Europeans.		Total
	Males.	Females.	Males.	Females.	
1913 	33,363		558		34,090 { Census 1911. Syrians 212 (1913).

3. Housing.

—	Number occupied by Europeans.	Number occupied by Natives.
Number of Houses or Huts :— 1913 	77*	5,239 (119 unoccupied). Syrians, 110 premises or parts of premises.

Number of Huts :—
1913

4. Mosquito Protection of Houses.

—			1913.
Number of European houses wholly mosquito protected 	—	—	—
Number of European houses with mosquito room 	—	—	—
Number rendered during the year wholly mosquito protected ...	—	—	—
Number rendered during the year partially mosquito protected ...	—	—	—

5. Erection of New Buildings during the Year.

—			1913.
Number of public buildings erected with sanction as to site, construction, and relation to other buildings.	—	—	—
Number of houses erected with sanction as to site, construction, and relation to other buildings.	—	—	—
Number of huts erected with sanction as to site, construction, and relation to other buildings.	—	—	—
Number of houses built without sanction 	—	—	—
Number of huts built without sanction 	—	—	—

Vide Addendum.

* Excludes Hill Station, Clines Railway Reservation and Barracks.

Action taken :—

—	Number of Prosecutions.		Number demolished.	
	Huts.	Houses.	Huts.	Houses.
1913 ...	—	—	—	—

6. Markets.

—	Total Number.	Number paved and drained.	Number unpaved.
1913 ...	6	4	2

7. Slaughter-houses.

—	Total number.	Total paved and drained.	Number unpaved.
1913 ...	1	1	—

8. Latrines.

—	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—				
1913 ...	9	23	9	21
Number of New Public Latrines erected during year :—				
1913 ...	—	—	—	—
Number of Public Latrines repaired during year :—				
1913 ...	5	—	5	—
Number of Public Latrines demolished during year :—				
1913 ...	—	—	—	—
—				1913.
Number of Private Latrines ...	—	—	—	125
Average number of pails of nightsoil removed daily ...	—	—	—	191
Average number of soiled pails removed and clean pails substituted ...	—	—	—	—
Number of nightsoil men employed to clean latrines and remove excreta ...	—	—	—	—
Number of cesspools ...	—	—	—	3,697
Number of cesspools cleansed ...	—	—	—	205
Number of new cesspools constructed during the year ...	—	—	—	75
Number of old cesspools abolished ...	—	—	—	98
Number of cesspools oiled regularly by Department ...	—	—	—	153

9. Removal of refuse.

Number of dustbins	—	—	65
Number of carts (if employed) at work, etc.	—	—	3 { Working inter-
Amount of refuse removed daily from streets	—	—	mittently.
Number of carts (if employed) at work daily, etc.	—	—	—
Amount of refuse removed daily, etc.	—	—	—
Number of men employed for moving refuse	—	—	86 average.

10. Mode of disposal of excreta, refuse and offal.

	Daily average number of pails of excreta.			Daily average number of cartloads of refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
			1913.			1913.			1913.
Burial or trenched	—	—	—	—	—	—	—	—	—
Burnt	—	—	—	—	—	—	—	—	—
Thrown into Sea	—	—	—	—	—	—	—	—	—
*Otherwise dealt with	—	—	—	—	—	—	—	—	—

* State mode of disposal.

11. Average daily number of cartloads of tin cans, bottles, broken crockery and other incombustible material removed from houses, huts and compounds.

	1913.
—	—

12. Water Supply.

Nature of Water Supply.			1913.
Pipe-borne water :—			
Source (river, lake or spring) :—			Streams.
Number of linear yards	—	—	—
Number of stand pipes along roads	—	—	185
Number of stand pipes in compounds and houses	—	—	210
Wells :—			premises having 550 taps.
Public :—			
Number	—	—	—
Number with pumps protected against surface water and mosquito-protected	—	—	—
Private :—			
Number	—	—	683
Number protected against surface water and mosquito-protected	—	—	—

Nature of Water Supply.												1913.
Tanks :—												
Public :—												
Number underground	...	...	...	...	...	...	...	...	—	—	—	—
Number mosquito-protected and served by pumps	...	...	...	...	...	...	...	...	—	—	—	—
Number above ground	...	...	...	...	...	...	...	...	—	—	—	—
Number mosquito-protected	...	...	...	...	...	...	...	...	—	—	—	—
Number of 400 gallons capacity or less	...	...	...	...	...	...	...	...	—	—	—	—
Number above 400 gallons	...	...	...	...	...	...	...	...	—	—	—	—
Tanks :—												
Private :—												
Number underground	...	...	...	...	...	...	...	...	—	—	—	—
Number mosquito-protected	...	...	...	...	...	...	...	...	—	—	—	—
Number above ground	...	...	...	...	...	...	...	...	—	—	—	41
Number mosquito-protected	...	...	...	...	...	...	...	...	—	—	—	2
Number of 400 gallons capacity or less	...	...	...	...	...	...	...	...	—	—	—	—
Number above 400 gallons	...	...	...	...	...	...	...	...	—	—	—	—
Nature of tanks :—												
Wood	...	...	...	...	...	...	...	...	—	—	—	—
Iron	...	...	...	...	...	...	...	...	—	—	—	27
Concrete	...	...	...	...	...	...	...	...	—	—	—	14
Barrels :—												
Number	...	...	...	...	...	...	...	...	—	—	—	928
Number mosquito-protected	...	...	...	...	...	...	...	...	—	—	—	63

13. Drainage.

Nature of Drainage.									Public.		Private.	
Masonry Drains :—												
Lineal yards of masonry drains :—												
1913	...	...	...	...	...	...	...	...	—	—	—	—
Lineal yards reconstructed during the year :—												
1913	...	...	...	...	...	...	...	...	200	—	—	—
Lineal yards repaired during the year :—												
1913	...	...	...	...	...	...	...	...	410	—	406	—
Lineal yards of new drains constructed during the year :—												
1913	...	...	...	...	...	...	...	...	300	—	475	—
Earth drains or ditches :—												
Number of linear yards of ditches cleaned :—												
1913	...	...	...	...	...	...	...	...	5,700	—	—	—
Number of linear yards of ditches dug and graded :—												
1913	...	...	...	...	...	...	...	...	8,400	—	—	—
Average frequency of clearing ditches of grass :—												
1913	...	...	...	...	...	...	...	...	12	—	—	—

14. Clearance of undergrowth, long grass and jungle.

												1913.
Number of square yards of weeds, grass, and vegetation cut and removed									—	—	—	1,000*
Average frequency of clearance of rank vegetation on same area									—	—	—	4

* The cleaning of Crown lands is dealt with in P.W.D. Annual Report.

15. Excavations and low-lying land.

—			1913.
Number of pools and excavations	—	—	—
Number of excavations filled up	—	—	—
Amount of low-lying and marsh land raised and drained	—	—	—
Number of pools, marshes, streams, etc., fish-stocked	—	—	—
Number of cubic yards of material used for filling up pools and excavations	—	—	2,000*
Number of persons fined for making new excavations	—	—	—
Average number of men daily employed in filling up pools, etc. ...	—	—	—

* Broken stone dumped in Grassfields area under Prof. Simpson's scheme.

16. Oiling.

—			1913.
Number of times drains oiled	}	—	13,256
Number of times pools, cesspools and excavations oiled			
Number of wells oiled			
Average number of men daily employed for oiling drains, pools, water-tanks or barrels	—	—	5

17. Inspections and Prosecutions.

—			1913.
Number of inspectors employed	—	—	19
Number of house inspections	—	—	64,552
Number of inspections where larvæ were found	—	—	1,104
Number of notices served to remove conditions causing the breeding of larvæ	—	—	12
Number of persons fined for having mosquito larvæ on premises ...	—	—	736
Number of notices served to remove insanitary conditions on premises	—	—	4,029
Number of persons fined for not removing insanitary conditions after notice	—	—	128
Number of soda and aerated water factories inspected	—	—	1

ADDENDUM.

Re 5. The Acting Sanitary Engineer reports for the year :—

Notices of Intention to build	312
„ „ Commencement	252
„ „ Completion of building	126

Information received regarding :—

5, 13, 15 was from	P.W.D.
12 „ „	Corporation

No. 2.

SUMMARY OF ROUTINE SANITARY WORK DONE DURING THE YEAR
IN THE TOWN.

1. Name of Town : BONTHE.

—	Approximate area.	Number of proclaimed open spaces.
1913 	205 acres.*	—

2. Population.

—	No. of Natives.		No. of Europeans.		Total.
	Males.	Females.	Males.	Females.	
1913 	2,030	2,876	36	7	4,949

Syrians, 17 ; Indians, 3.

3. Housing.

—	Number occupied by Europeans.	Number occupied by Natives.
Number of Houses :— 1913 	23	1,026

Number of Huts :—
1913

4. Mosquito Protection of Houses.

—			1913.
Number of European houses wholly mosquito protected	—	—	—
Number of European houses with mosquito room	—	—	2
Number rendered during the year wholly mosquito protected	—	—	—
Number rendered during the year partially mosquito protected	—	—	—

5. Erection of New Buildings during the Year.

—			1913.
Number of public buildings erected with sanction as to site, construction, and relation to other buildings	—	—	—
Number of houses erected with sanction as to site, construction, and relation to other buildings	—	—	35
Number of huts erected with sanction as to site, construction, and relation to other buildings	—	—	25
Number of houses built without sanction	—	—	—
Number of huts built without sanction	—	—	—

* Approximately.

Action taken :—

-----	Number of Prosecutions.		Number Demolished.	
	Huts.	Houses.	Huts.	Houses.
1913 	—	—	25	—

6. Markets.

-----	Total number.	Number paved and drained.	Number unpaved.
1913 	2	2	—

7. Slaughter-houses.

-----	Total number.	Total paved and drained.	Number unpaved.
1913 	1	1	—

8. Latrines.

-----	For Males.		For Females.	
	Number.	Number of Seats.	Number.	Number of Seats.
Number of Public Latrines :—				
1913 	5	17	—	—
Number of New Public Latrines erected during year :—				
1913 	—	—	—	—
Number of Public Latrines repaired during year :—				
1913 	2	—	—	—
Number of Public Latrines demolished during year :—				
1913 	1	—	—	—
-----				1913.
Number of Private Latrines 	—	—	—	—
Average number of pails of nightsoil removed daily 	—	—	—	17
Average number of soiled pails removed and clean pail substituted ...	—	—	—	—
Number of nightsoil men employed to clean latrines and remove excreta ...	—	—	—	—
Number of cesspools 	—	—	—	—
Number of cesspools cleansed 	—	—	—	—
Number of new cesspools constructed during the year 	—	—	—	—
Number of old cesspools abolished 	—	—	—	—
Number of cesspools oiled regularly by Department 	—	—	—	—

9. Removal of refuse.

			1913.
Number of dustbins	—	—	19
Number of carts (if employed) at work, etc.	—	—	—
Amount of refuse removed daily from streets (hammock loads)	—	—	58
Number of carts at work daily, etc.	—	—	—
Amount of refuse removed daily, etc.... ..	—	—	—
Number of men employed for removing refuse	—	—	20

10. Mode of disposal of excreta, refuse and offal.

	Daily average number of pails of excreta.			Daily average number of cartloads of refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
			1913.			1913.			1913.
Burial or trenched	—	—	—	—	—	—	—	—	—
Burnt	—	—	—	—	—	—	—	—	—
Thrown into Sea	—	—	—	—	—	—	—	—	—
*Otherwise dealt with	—	—	—	—	—	—	—	—	—

* State mode of disposal.

11. Average daily number of cart-loads of tin cans, bottles, broken crockery, and other incombustible material removed from houses, huts and compounds.

	1913.
—	—

12. Water Supply.

Nature of Water Supply.			1913.
Pipe-borne water :—			
Source (river, lake or spring) :—			
Number of linear yards	—	—	—
Number of stand pipes along roads	—	—	—
Number of stand pipes in compounds and houses	—	—	6
Wells :—			
Public :—			
Number	—	—	10
Number with pumps protected against surface water and mosquito-protected	—	—	10
Private :—			
Number	—	—	340
Number protected against surface water and mosquito-protected	—	—	20
Tanks :—			
Public :—			
Number underground	—	—	—
Number mosquito-protected and served by pumps	—	—	—
Number above ground	—	—	3
Number mosquito-protected	—	—	3
Number of 400 gallons capacity or less	—	—	—
Number above 400 gallons	—	—	—

Nature of Water Supply.										1913.
Tanks :—										
Private :—										
Number underground								—	—	—
Number mosquito-protected								—	—	—
Number above ground								—	—	—
Number mosquito-protected								—	—	—
Number of 400 gallons capacity or less								—	—	—
Number above 400 gallons								—	—	—
Nature of tanks :—										
Wood								—	—	—
Iron								—	—	3 ⁺
Concrete								—	—	4
Barrels :—										
Number								—	—	6
Number mosquito-protected								—	—	—

* 1 York Island.

13. Drainage.

Nature of Drainage.						Public.	Private.
Masonry Drains :—							
Lineal yards of masonry drains :—							
1913						1,800	
Lineal yards reconstructed during the year :—							
1913						290	
Lineal yards repaired during the year :—							
1913						56 ³ / ₄	
Lineal yards of new drains constructed during the year :—							
1913						—	
Earth drains or ditches :—							
Number of linear yards of ditches cleaned :—							
1913						2,146	
Number of linear yards of ditches dug and graded :—							
1913						1,215	
Average frequency of clearing ditches of grass :—							
1913						Each month	

14. Clearance of undergrowth, long grass and jungle.

			1913.
Number of square yards of weeds, grass, and vegetation cut and removed	—	—	—
Average frequency of clearance of rank vegetation on same area ...	—	—	—

15. Excavations and low-lying land.

—			1913.
Number of pools and excavations	—	—	4
Number of excavations filled up	—	—	5
Amount of low-lying and marsh land raised and drained	—	—	—
Number of pools, marshes, streams, etc., fish-stocked	—	—	—
Number of cubic yards of material used for filling up pools and excavations	—	—	—
Number of persons fined for making new excavations	—	—	—
Average number of men daily employed in filling up pools, etc. ...	—	—	8

16. Oiling.

—			1913.
Number of drains oiled)	—	—	18
Number of pools and excavations oiled)	—	—	—
Number of tanks and barrels oiled	—	—	—
Average number of men daily employed for oiling drains, pools, water tanks or barrels	—	—	—

17. Inspections and Prosecutions.

—			1913.
Number of inspectors employed	—	—	2
Number of houses inspected	—	—	67
Number of houses where larvæ were found... ..	—	—	37
Number of notices served to remove conditions causing the breeding of larvæ	—	—	27
Number of persons fined for having mosquito larvæ on premises ...	—	—	37
Number of notices served to remove insanitary conditions on premises	—	—	—
Number of persons fined for not removing insanitary conditions after notice... ..	—	—	158
Number of soda and aerated water factories inspected	—	—	—

YORK ISLAND—

Population :—Europeans	11
Natives	341 males
„	453 females
Total	805
Inspector	1
Headman	1
Labourers	3
Public pump wells	3
„ tanks (16,000)	1
Latrine (over river)	1

10th March, 1914.

R. H. KENNAN,
Senior Sanitary Officer.

PICTURES

TO ILLUSTRATE THE

ANNUAL SANITARY REPORT

FOR THE YEAR 1913.

INDEX.

[illegible]

FREETOWN.

1



Concrete drain, west side of Howe Street, Freetown.

2



Paved drain, east side of Howe Street, Freetown.

3



Old all-stone house with chimney, Howe Street, Freetown.

4



Common type of upper middle class half-stone house, Howe Street, Freetown.

5



Old type of rubbish chute and latrine over river, Faleonbridge, Freetown.

6



Refuse bin, type 1913, Freetown.

FREETOWN.

7



Main block of old Freetown Prison, being demolished to clear site for new "Connaught" Hospital, which will replace the "Royal Hospital and Asylum" "Colonial Hospital," shewing old shingle roof exposed after removal of galvanized corrugated iron sheets. The shingles were probably such as were used on the houses in the early days of the settlement.

FREETOWN.

8



One spring source of Moore's Brook on mountain side of Kissy Road, Freetown.

9



Course of Moore's Brook, Freetown.

10



Channel with graded bottom cut in rock in bed of Moore's Brook, Freetown.

11



Termination of concrete drain at cliff summit, with irregular course to final outfall, Freetown.

FREETOWN.

12



Circular Road Cemetery, Freetown ; controlled by Corporation (closed).

13



The "old " Cemetery, Freetown (closed).

(" Presented to the inhabitants of Sierra Leone by the Church Missionary Society, MDCCCXVI.")

FREETOWN.

14



Ascension Town Cemetery, Freetown ; controlled by Corporation.

15



Kissy Road Cemetery, Freetown ; controlled by Corporation.

FREETOWN.

16



Freetown Corporation Fish Market ; built as a result of Prof. Simpson's recommendations.

17



Victoria Park, Freetown ; controlled by Corporation.

18



Meat, Fish, Vegetable, etc., Market, Kroo Town Road ; controlled by Corporation.

FREETOWN.

19



Produce market day at King Jimi, Freetown.

20



Beach at "King Jimi." Produce market on right; slaughter house on left; latrine over river to left; Imperial Military slaughter house above and between the slaughter house and market. New premises of Messrs. Elder Dempster & Co. above, to left. Market and slaughter house under Corporation.

FREETOWN.



Dry Goods, Vegetable and Fruit Market, Water Street ; under Corporation.



Garrison Street Meat Market ; under Corporation.



FREETOWN.



Open air Public Laundry at Nicol Brook, below Kissy Street Bridge.



Same as above, view towards Railway Bridge.



FREETOWN.

25



Stone Quarry at Savage Square, Freetown.



FREETOWN.

26



New three-roomed Bungalow for Director of Public Works, Hill Station.

27



New two-roomed Bungalow for Assistant Director of Public Works, Hill Station.



KISSY.

28



Male Lunatic Asylum (Kissy).

29



Female Lunatic Asylum (Kissy).

31



Part of Male Incurable Hospital, and attendants' quarters (Kissy).

30



Female attendants' quarters (F.L.A. Kissy).

32



Small-pox Hospital (Kissy).

FREETOWN.

Gathering ground of augmenting supply to Freetown Water Works.

Leicester Peak.



Sugar Loaf Mount.



33



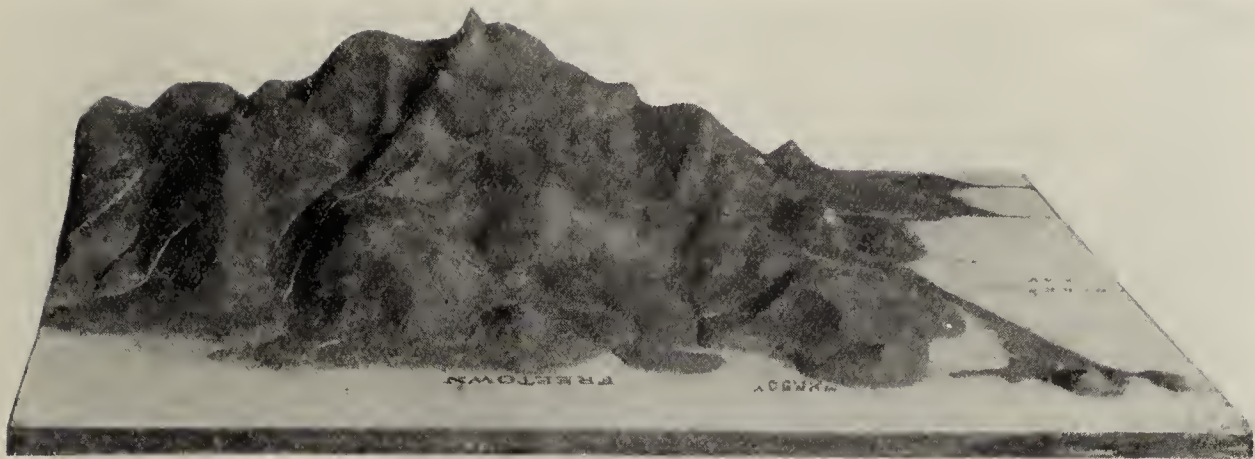
Hill Station Bungalows.



Governor's Bungalow.

FREETOWN.

34



35



FREETOWN.

36



View of Relief Map from the North over the River Sierra Leone. Sugar Loaf is in the middle, at the back; Leicester Peak is almost in line, nearer; between them is Babadori Saddle, from which the Lunley Valley with Babadori River descends to the right (West) to discharge into the sea, half way back on right of picture.



FREETOWN.

37



Photo of Relief Map, shewing water gathering grounds for Freetown Water Works, etc. Those grounds at present used are outlined with dots (from East to West they are: Edioroko, George, Congo), and the new Lumley Valley (Babadori) ground is outlined with dashes. The small dotted area at the S.E. corner of Lumley Valley represents the Wilberforce Barracks gathering ground. The more Southerly D in the valley to the N.E. of the Lumley Valley is at the site of the main dam of the Hill Station Water Supply. The other D's are at the site of the Freetown Water Works dams. The stream shewn on the S.E. of Leicester (Village) is the mountain torrent from which (unprotected) supply goes to Clines Railway Reservation.

PROTECTORATE.

38



D.C. "Rest House," in compound.

39



Circular hut, grass thatch.

40



Hut and rice store.

41



Hut with low eaves.

42



Court Messengers' lines (Batkamu).

43



Hut verandah from inside.

44



Hut in construction.

45



Entrance to Chief's (family) compound from within.

46



Rice store.

47



Open "Barri" (shelter) in centre of village.



PROTECTORATE.

48



Main road with drains in town.

49



Main road with drains in town.

50



Rough street with drains in town on hill side.

51



View in cattle town, shewing enclosures of cattle compounds.

52



Town planning (Bambama, Ronietta District).

53



Palm thatching.

PROTECTORATE.

54



Water hole at Moyamba, Ronietta District.

PROTECTORATE.

55



District Commissioner's Bungalow, Batkanu,
Karene District.

56



Medical Officer's Bungalow, Batkanu, Karene
District.

57



D.C.'s Office, Batkanu.

58



Hospital, Batkanu.



PROTECTORATE.

59



Tidal river, overflow at Mabang (Railway District line).

60



Road entering Bharmoi crossing dry stream bed (Karene District).

61



Same as above, shewing stagnant pool in stream bed.

62



Same as above, showing supports for temporary bridge over stream during rains.



PROTECTORATE.

63



Main road in Matakong, Railway District ;
no drains.

64



Chief's prison, Matakong (Sumbuya).

65



Bridge in high embankment across swamp at
Sumbuya; borrow-pits to make embankment
made swamp worse.

66



Embankment for road across swamp at Sumbuya.

67



Chief's house at Yongroo (Bullom).

68



D.C. Rest House, Yongroo (Bullom).

69



Entrance to Chief's compound.

70



Huts with grass thatch and hut with "bamboo"
thatch.

71



Trader's hut with "bamboo" thatch at
Port Lokko.

PROTECTORATE.

72



River Taia at Mano, just above Mano, shewing broken bank through which swamp drains or is flooded, according to height of river level (dry season).

[Photo by Mr. E. D. Vergette, Crown Prosecutor].

73



Swamp area at Mano (railway line) flooded by river overflow in rains, partially clear (dry season).

[Photo by Mr. Vergette].



PROTECTORATE.

74



Swamp area at Mano Railway line, flooded by river overflow in rains, partially cleared (dry season).

75



Same as above.

PROTECTORATE.

76



Site of railway bridge crossing Rokell River near Makump, shewing one concrete bridge pillar and river confined to small channel in rock bed in dry season. During rains water level rises to within one-fourth height of pillar from the top.

77



Same as above.

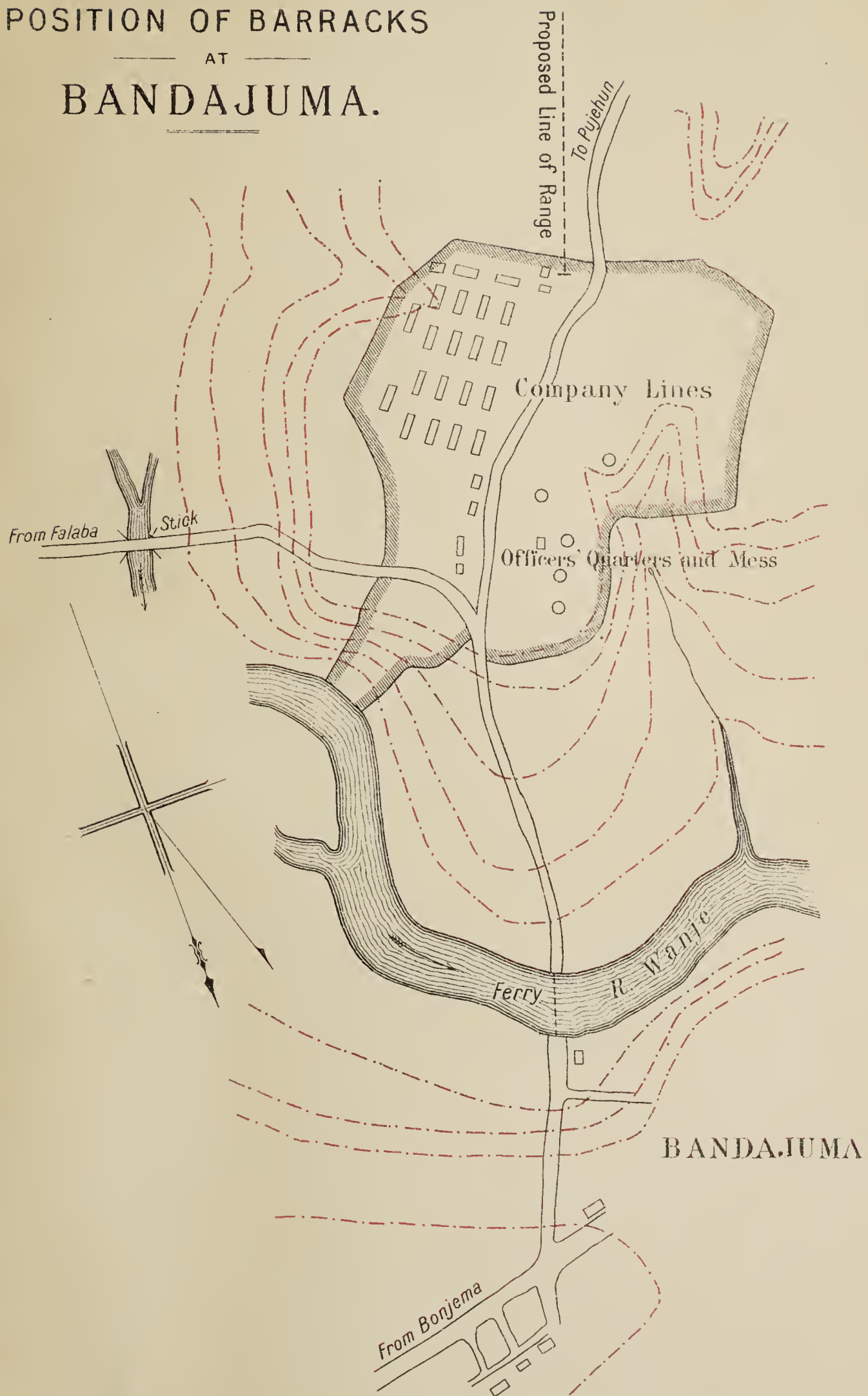
PROTECTORATE.

78

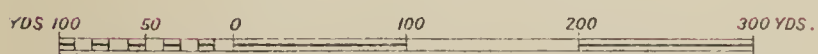



Entrance to "Porro" bush (sacred grove). Proposed to be exempted from provisions of Public Health (Protectorate) Ordinance.

SKETCH shewing POSITION OF BARRACKS AT BANDA JUMA.



Scale, 12 Inches to 1 Mile.



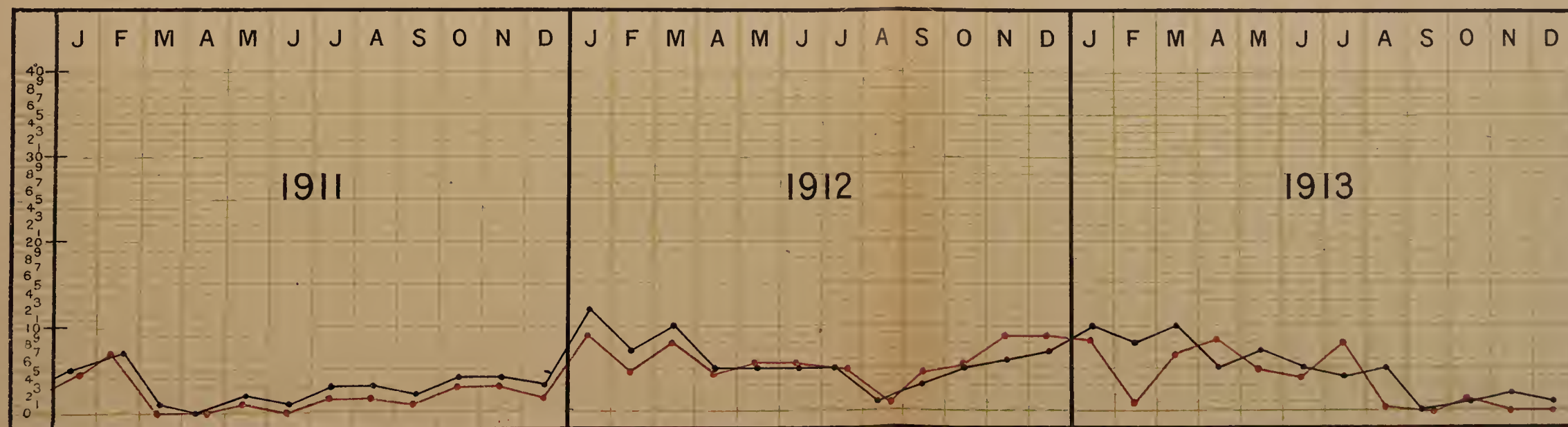
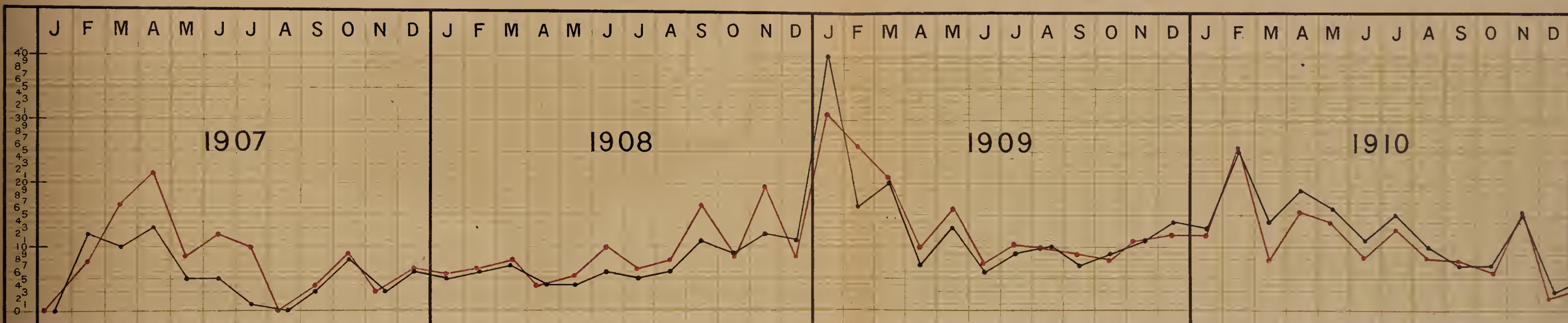
 *Boundary of bush cleared.*

CHART

Showing cases of Syphilis seen at Batkanu Dispensary
during the Years 1907-1913 inclusive.

BLACK line denotes the actual number of cases of Syphilis recorded.

RED line denotes the percentage of Syphilitic cases to total number of Patients attending the Dispensary.



KOINADUGU DISTRICT

DISTRIBUTION OF GLOSSINAE.



FREE TOWN

PLAN TO ILLUSTRATE DR ALLAN'S REPORT
ON WELLS AS MOSQUITO BREEDING PLACES.



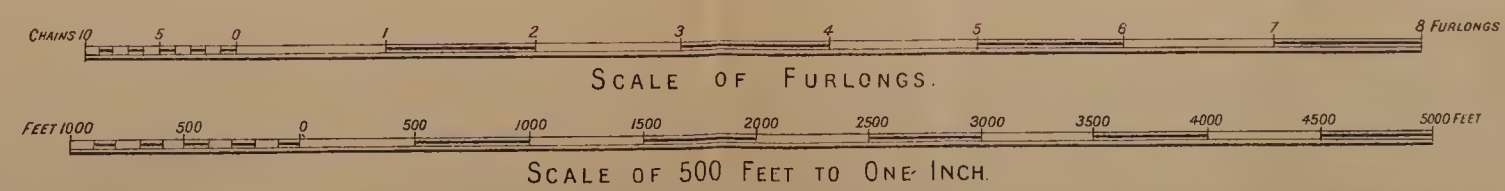
KEY

Wells examined for Larvæ & none found.
" " " " " found.
" not " " " "

Amongst those diagnosed by the Imperial Bureau
of Entomology were :- *Stegomyia fasciata*;
Anopheles costalis; *Culex decens*; *Culex insignis*;
Culex tigripes.

Red lines indicate division of the City for
Sanitary Inspection purposes.

From map marked in greater detail by Dr W. Allan,
A.M.O.H. 1913.





FREE TOWN

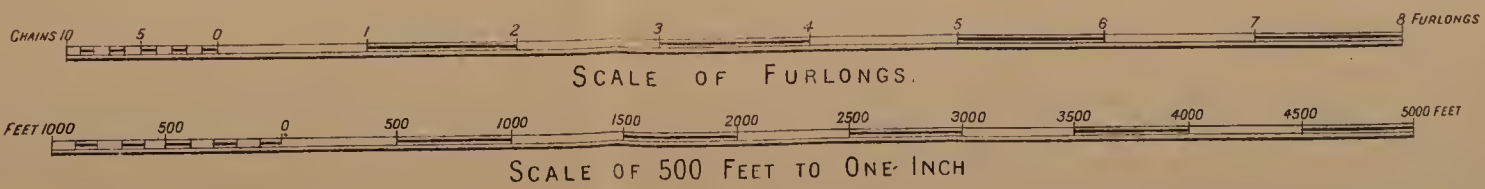
PLAN TO SHEW NUMBER & SITES OF
PUBLIC STAND-PIPES, LATRINES, BINS, &c.



KEY

- Standpipes..... shewn thus .
- Tin & Bottle-bins..... " x
- Refuse..... " ■
- Incinerators..... " ■
- Refuse shoots..... " ■
- Latrines..... " ■
- Open-air public Laundries..... " ■

From map marked in greater detail by D^r W. Allan,
A.M.O.H. 1913.





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